

**SITE INSPECTION
TASK WORK PLAN**

**HOUSTON LIGHTING AND POWER W.A. PARISH GENERATING STATION
THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

Prepared for

**U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202**

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Work Assignment No.: 06-97-03-0004
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September 1997

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SECTION 1 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), Roy F. Weston, Inc. (WESTON®) has been tasked to perform a Site Inspection (SI) of the Houston Lighting and Power W.A. Parish Generating Station (HL&P) site (EPA CERCLA Identification Number TXD097311849) in Thompsons, Fort Bend County, Texas (Figure 1-1). Based on available site information, WESTON believes that the site is eligible for action under CERCLA/SARA. The U.S. Environmental Protection Agency (EPA) Region 6 retained WESTON to complete this investigation under EPA Contract Number 68-W5-0019 and Work Assignment Number 06-97-03-0004.

This document represents the Task Work Plan (TWP) for the SI. The purpose of this document is to summarize available background information for the site and, based on this information and the results of a site reconnaissance, propose any additional investigation activities required for completion of the SI.

1.1 PURPOSE OF THE INVESTIGATION

The SI is the second investigation in a series of screening assessments in which EPA evaluates hazardous waste sites under CERCLA/SARA. The purpose of this SI is to identify immediate or potential threats that hazardous substances attributable to the site may pose to human health and the environment by documenting the existence and migration of hazardous substances related to the site and by identifying the receptors, or targets, potentially exposed to the hazardous substances. EPA will use the information obtained during the SI to evaluate the site using the Hazard Ranking System (HRS) and to help decide if the site is a potential candidate for inclusion on the National Priorities List (NPL). Depending on the results of the SI, EPA may propose the site for listing on the NPL, decide that further investigation of the site is required, or determine that no further action should be taken at the site under CERCLA/SARA.

1.2 SCOPE OF WORK

The scope of work for the SI will focus on obtaining the most important background information and analytical data required to evaluate the site using the HRS. WESTON will complete the following major tasks as part of this SI:

- Obtain and review available background information concerning the site.
- Research data related to the groundwater, surface water, soil exposure, and air pathways.

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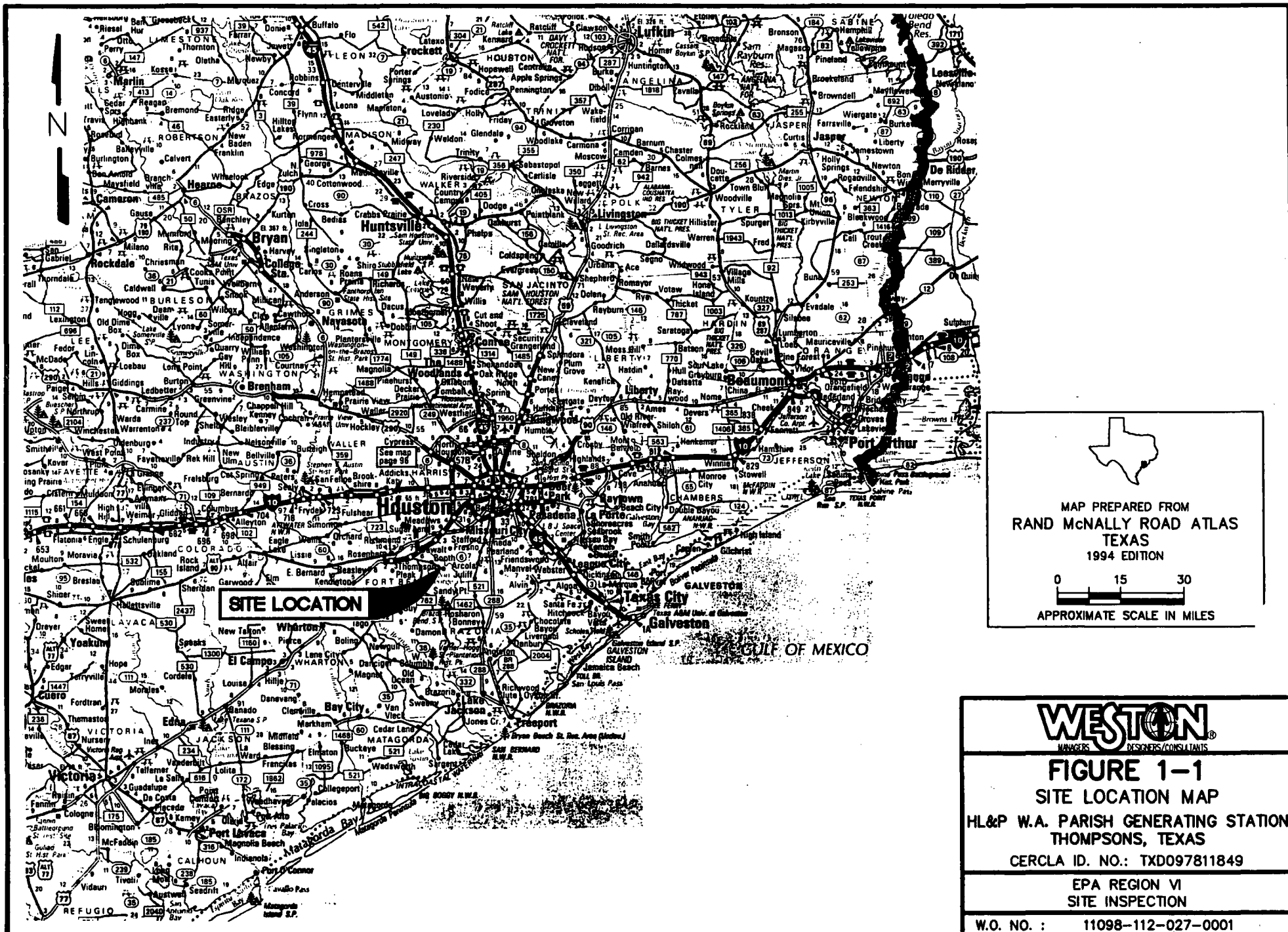
- Conduct a site reconnaissance survey to document current site conditions, to locate potential hazardous waste sources, and to identify potential receptors or targets of a release.
- Prepare a site-specific TWP and a Health and Safety Plan (HASP) describing planned investigation activities and appropriate safety protocol.
- Prepare a Site Inspection Report within the HRS framework, which presents the background information obtained for the site and documents the results of the site reconnaissance and analytical data review.

1.3 WORK PLAN ORGANIZATION

This SI TWP has been organized in a format that is intended to facilitate application of information in the report to the HRS. This TWP is organized as follows:

- Section 1—Introduction
- Section 2—Site Background Information
- Section 3—Exposure and Migration Pathway Characteristics
- Section 4—Sampling Visit Activities
- Section 5—Project Information
- Section 6—References

A copy of the limited HASP is provided in Appendix A. All referenced figures and tables are found at the end of each section.



SECTION 2

SITE BACKGROUND INFORMATION

A summary of the location, description, operational history, hazardous waste characteristics, and concerns of the site is presented in the following subsections. The site background information presented in this TWP has been obtained from reports previously completed for the site, as well as from WESTON's recent site reconnaissance.

2.1 SITE LOCATION AND DESCRIPTION

The HL&P site is located at 2759 Jones Road, Thompsons, Fort Bend County, Texas. The site can be reached by traveling south from the City of Houston on U.S. Highway 59 (Hwy. 59). Exit at Crabb River Road and travel approximately 2 miles south on Crabb River Road, continue 3 miles south on FM 762, then travel 3 miles east on Jones Road. The site is located approximately 3 miles southwest of the Town of Thompsons and adjacent to Smithers Lake. The geographic coordinates of the site are approximately 29°28'45" north latitude and 95°38'05" west longitude (Reference 1). A Site Area Map derived from the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps of Smithers Lake, Missouri City, Sugar Land, and Thompsons, Texas, is provided as Figure 2-1 (Reference 2).

WESTON contacted Mr. Robert Moles, HL&P Parish Station General Manager, at PO Box 98 Thompsons, Texas 77481 in May 1997. Mr. Robert Moles signed an EPA Access Agreement on 8 May 1997, allowing WESTON access to the HL&P site to complete the SI (Reference 3). WESTON conducted an on-site reconnaissance of the HL&P site and the surrounding area on 22 May 1997.

The HL&P site consists of a coal and gas power production facility covering approximately 3,000 acres (Reference 4). Access to the property is restricted by a fence and a security gate at the entrance to the plant. During business hours, a security guard occupies the guard house at the entrance to the facility; otherwise, the gate is locked. A Site Plan is provided as Figure 2-2. Notable site features of the power plant include an administration building, a coal pile, a paved parking lot, and fourteen solid waste management units (SWMU), described below (References 4 and 5):

- SWMU 1—An open tank settling basin used for the collection of low-volume chemical wastes.
- SWMU 2—A sump used for temporary storage of demineralizer wastewater prior to transfer into SWMU 1.
- SWMU 3—Another settling basin for low-volume chemical wastes.
- SWMU 4—Two chemical treatment systems for discharge from SWMUs 1 and 3.

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- SWMU 5—A holding basin for discharge to SWMU 4.
- SWMU 6—A sump to collect discharge to SWMU 5.
- SWMU 7—A surface impoundment that collects inorganic metal cleaning wastewater. Contents are sent to SWMU 4 for treatment.
- SWMU 8—A surface impoundment containing organic metal cleaning waste. The organic sludge is burned in two boilers.
- SWMU 9—Three former temporary inorganic acid storage ponds.
- SWMU 10—A Class II nonhazardous waste industrial landfill area.
- SWMU 11—Three waste oil collection facilities.
- SWMU 12—An outside drum storage area on a concrete slab.
- SWMU 13—A bulk storage area that is only used intermittently during facility maintenance.
- SWMU 14—A landfill that is used for the on-site disposal of construction demolition debris.

Other site features include Smithers Lake, Dry Creek, and Rabbs Bayou. The site is bounded to the north by Smithers Lake, to the south by Jones Road, and to the west and east by open areas of vegetation (Reference 2). Presently, there are nine monitoring wells and seven potable water wells on site (References 6 and 7).

2.2 SITE HISTORY

The HL&P site is privately owned by Houston Light and Power. The W.A. Parish Generating Station began operating in 1958 with gas-fired turbine units. Two coal-fired units were constructed between 1974 and 1978, and coal operations began in 1978. Two more coal-fired units came on-line in 1980 and 1982 (Reference 4). The plant produces electricity by generating steam from both gas-operated and coal-fired turbines. Process water is routed through chemical treatment systems to remove suspended solids and adjust pH. Treated wastewater is discharged into Smithers Lake. Sludges remaining on the floor of surface impoundments are periodically removed and sent through a rotary vacuum to remove moisture. Dried sludge, bottom ash, and fly ash are stored in cells located within an on-site nonhazardous industrial landfill. Bottom ash and fly ash are sold for recovery. Flue gas desulfurization sludge is dewatered and stored in the industrial landfills. Oil and oil sludge generated on-site are drummed and stored for off-site

disposal. All other waste associated with the power plant operations are stored for off-site disposal.

In 1977, three inorganic acid storage ponds (SWMU 9) were excavated for temporary use during the construction of two units of the chemical waste treatment system. On an intermittent basis, the natural clay-lined impoundments were used for the disposal of a mixture of chemical cleaning waste from the feedwater and boiler (References 4 and 5). In 1978, analytical results and information concerning the sampling of waste from the temporary surface impoundments indicated that the waste contained elevated concentrations of metals (Reference 8). HL&P files indicated at the time of the sampling event, the impoundments held approximately 6,400,000 gallons of wastewater (Reference 8). No wastewater was stored in the three impoundments after early 1980. By March 1982, all three impoundments had been backfilled and graded over following waste removal. Soil was not removed from the impoundment during this activity (Reference 9).

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

WESTON reviewed available EPA CERCLA files and background information provided by HL&P. Based on this file information, previous investigations performed for the HL&P site include the following:

- In 1976, McClelland Engineers, Inc. conducted a geotechnical investigation at the ash storage area (SWMU 10) (Reference 10). Soil borings indicated relatively uniform soil conditions throughout the tract that consisted primarily of highly plastic clays of CH classification to about a 30-foot depth underlain by silty fine sand to the maximum depth explored, 60 feet. The report also concluded that the 4 feet of natural silty clay-plastic clay (CL-CH) soils in the ash storage area (SWMU 10) would provide a suitable liner for all the cells in the landfill. Thus, additional compacted clay or artificial liners were not needed. However, the report also indicated that localized deposits of silts that may be present at the excavation's finished grade should be excavated and replaced by compacted clay.
- On 8 June 1983, an Open Dump Inventory inspection was conducted by Texas Department of Water Resources (TDWR) (Reference 11). The inspector indicated that runoff from the landfill cells in SWMU 10 was not contained, because the landfill cells were not diked or bermed and were located next to Rabbs Bayou. The SWMU was found to be compliant with all other criteria.
- In 1985, Resource Engineering conducted a hydraulic evaluation to assess the need for groundwater monitoring in the vicinity of SWMU 10, the industrial landfill (Reference 12). Data generated from a cone penetrometer survey were used to develop six stratigraphic cross sections, which characterized the soil profile across the area. The profiles indicated that the potential for groundwater contamination was low. However, Resource Engineering recommended a conservative approach

by installing two monitoring wells within shallow sand zones. The report recommended both wells would screen the entire sand layer and would help to establish the hydraulic gradient and to provide monitoring of the hydrogeologic unit.

- On 28 January 1986, EPA issued a Notice of Violations citing 18 violations of untreated wastewater releases into Smithers Lake during 1985. These violations were attributed to mechanical breakdowns, and corrective actions were addressed in Houston Lighting and Power's Answer to Findings of Violation and Administrative Order of 28 January 1986, dated 3 March 1986 (Reference 13).
- In 1988, A.T. Kearney, Inc. conducted a review of the state's interim status clean-closure determination of the outdoor container storage area (SWMU 12) for the EPA, Region 6 (Reference 14). The A.T. Kearney, Inc. review found the closure had not met the closure performance standard of 40 CFR 265.111. The Closure Plan and Certification of Closure did not demonstrate how closure activities controlled, minimized, or eliminated post-closure escape of hazardous waste, contaminated runoff, or hazardous waste decomposition products to the ground or surface water or to the atmosphere (Reference 14). On 25 September 1995, the Texas Water Commission (TWC) approved the closure (Reference 15).
- In July 1990, ICF Technology, Inc. conducted a Preliminary Assessment (PA) under contract to EPA, Region 6. CERCLA, TWC, and National Pollutant Discharge Elimination System (NPDES) files were searched for available information. A site reconnaissance was not conducted. The PA indicated that the site contained eight surface impoundments, two chemical waste treatment systems, three acid collection/ash ponds, a lagoon storage area, waste oil and oil sludge collection systems, two less than 90-day container storage areas, one bulk storage area, and a landfill (Reference 4).

The PA reported concern with the contaminants found in a TWC Notice of Solid Waste Management Registration and laboratory data from samples collected by HL&P on 11 March 1983 for Extraction Procedure Toxicity (EP Toxicity) tests. Sample analysis of demineralizer regenerant wastewater, metal cleaning inorganic acids (wastewater and sludge), and metal cleaning organic acids revealed arsenic, barium, cadmium, chromium, endrin, lead, lindane, selenium, and toxaphane in trace amounts. The TWC registration form listed acetone, asbestos, mercury, and polychlorinated biphenyl (PCB) contaminated solids and fluids as having been stored on-site.

The PA report concluded that waste migrations to groundwater, surface water, and air and soil exposure were a concern due to the targets in each pathway. On 2 August 1990, based on the findings of the PA, EPA recommended a site sampling investigation be performed on the HL&P site in order to document the

potential for or extent of any contamination in the groundwater and surface water pathway (References 16 and 17).

Presently, the plant is not permitted under Resource Conservation and Recovery Act (RCRA). However, the plant is an industrial solid waste management facility regulated by the Texas Natural Resource Conservation Commission (TNRCC). All hazardous waste generated at the site is stored in RCRA-compliant units for less than 90 days and shipped off-site (Reference 5). The plant applied for a Part A permit under RCRA in the early 1980s, but this application was later retracted (Reference 18). All outfalls of discharge water into Smithers Lake are regulated by a NPDES permit (Reference 5).

2.4 SOURCE WASTE CHARACTERISTICS AND SITE CONCERNS

Information concerning the known or potential waste sources at the HL&P site and the constituents thought to be associated with each source are described in the following subsections along with potential concerns associated with contaminant migration and exposure.

2.4.1 Waste Source Characteristics

The following subsections summarize each of the fourteen potential waste sources at the HL&P site that were identified in the 1990 PA. In order to describe each potential waste source, each subsection will be subdivided as follows:

- Activity—A description of waste generation and containment features of the SWMU.
- Existing Permit—The permit associated with the SWMU and/or its outfall.
- Monitoring—The type and frequency of monitoring associated with the SWMU and/or its permit and a summary of the monitoring results.
- Concerns—Compliance status and/or comments associated with the SWMU.

Information concerning the following subsections was collected from the following sources:

- The 1990 PA by ICF Technology (Reference 4).
- WESTON's field log book (Reference 5).
- McClelland Engineers' Geotechnical Investigation of Ash Storage Area (Reference 10).

- Wastewater discharge data sample results from February and March 1997 for various NPDES-permitted outfalls that are associated with SWMUs 1, 3, 5, 7, 10, and 11 (Reference 19).
- The 12 April 1985 memorandum outlining the guidelines for the Class III construction debris landfill, SWMU 14 (Reference 20).
- The 2 July 1996 TNRCC Notice of Registration (NOR) (Reference 21).
- NPDES permit information (fax) (Reference 22).
- October 1996 groundwater data from the sampling of the monitoring wells surrounding SWMU 10 (Reference 23).
- Wastewater Permit Exceedence Notification prepared by HL&P, January 1996 to June 1997 (Reference 24).
- Telephone call with Lucien Klejbuck of HL&P (Reference 25).
- November 1995 Application for an Amendment to TNRCC Permit No. 5794 for the Injection of Boiler Cleaning Wastewater into Stream Generating Units 5 and 6 (Reference 26).
- TNRCC Permit No. 6430A, Fly Ash-Bottom Ash Disposal System (Reference 27).
- The 1996 maximum contaminant level (MCL) list of metal concentrations in groundwater (Reference 28).

2.4.1.1 SWMU 1—Demineralizer Acid/Base Regeneration Wastewater Surface Impoundment 1

Activity

The impoundment is an above-grade, fiberglass-lined concrete open tank settling basin having two compartments holding 232,000 gallons each. It is used for the collection of low-volume chemical wastes including make-up demineralizer regenerant; condensate polisher backwash; boiler area, fly ash silo, and area and precipitator washdown wastes. This waste is classified as Class II waste. Waste from the settling basin is sent to the chemical waste treatment system (SWMU 4). Accumulated sludge is periodically removed from the basin floors and is sent to the sludge dewatering system portion of SWMU 4. After treatment, the wastewater is discharged by internal outfall 203 into Smithers Lake. It should be noted that wastewater from the aforementioned internal outfall 203, and internal outfalls 103, 403, 703, 603, 303, and 803 that shall be discussed later in this text combine into outfall 003, which discharges directly into Smithers Lake.

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Existing Permit

The internal outfall associated with this SWMU, 203, is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfall 203 is monitored daily for flow rate and weekly for total suspended solids (TSS) and oil and grease. Outfall 003 is monitored continuously for temperature and flow rate, and weekly for total residual chlorine, and biomonitoring once every six months. The results are self-reported to TNRCC.

Concerns

The current compliance status of outfalls 203 and 003 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences for these outfalls.

2.4.1.2 SWMU 2—Demineralizer Acid/Base Regeneration Wastewater Surface Impoundment 2

Activity

The impoundment is a below-grade, fiberglass-lined concrete sump tied to SWMU 1 and has a storage capacity of 82,000 gallons. It is used for the temporary storage of demineralizer wastewater prior to transfer to a chemical waste treatment system. The accumulated demineralizer regenerant inorganic sludge is periodically removed from the sump floor and is sent to the sludge dewatering system. After treatment the wastewater is discharged into Smithers Lake by internal outfall 203.

Existing Permit

Because SWMU 2 is tied to SWMU 1, the internal outfall associated with this SWMU is outfall 203. This outfall is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfall 203 is monitored daily for flow rate and weekly for total suspended solids (TSS) and oil and grease. Outfall 003 is monitored continuously for temperature and flow rate, and weekly for total residual chlorine, and biomonitoring once every six months. The results are self-reported to TNRCC.

Concerns

The current compliance status of outfall 203 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences for this outfall.

2.4.1.3 SWMU 3—Demineralizer Acid/Base Regeneration Wastewater Surface Impoundment 3

Activity

The impoundment is an above-grade, fiberglass-lined concrete open settling basin tied to SWMU 1 and has a storage capacity of 82,000 gallons. It is used for the collection of low-volume chemical wastes prior to transfer through outfall 403 to a chemical waste treatment system. The accumulated demineralizer regenerant inorganic sludge is periodically removed from the basin floors and is sent to the sludge dewatering system. After treatment, the wastewater is discharged into Smithers Lake by outfall 703.

Existing Permit

Outfalls 403 and 703 are permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfall 403 and 703 is monitored daily for flow rate and weekly for TSS and oil and grease.

Concerns

The current compliance status of outfall 703 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported that in December 1996 the daily maximum oil and grease in outfall 703 exceeded the permitted daily maximum. Twenty-four hour notification of this event was provided to TNRCC. The exceedence was believed to be the result of sulfur in the waste stream from the flue gas desulfurization system (FGDS). Procedures that control the volume of wastewater from the FGDS are reportedly being reviewed (Reference 24).

2.4.1.4 SWMU 4—Chemical Waste Treatment System

Activity

The chemical waste treatment system is a treatment system for discharge from SWMUs 1 and 3. The system consists of two steel-constructed clarifiers with a capacity of approximately 902,000 gallons and 1,842,000 gallons. A 6-inch-curbed concrete dike surrounds the clarifiers.

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This concrete dike is designed to direct any spills or runoff into a collection sump. The collected water from the sump is sent back to the wastewater treatment system.

The clarifiers consist of solids contact clarifiers and primary and secondary pH adjustment control system reaction mixing tanks for suspended solids removal and pH adjustment. The sludge generated in the chemical waste treatment systems, containing demineralizer regenerant, boiler blowdown and inorganic metal cleaning waste, is pumped to the sludge dewatering system, which is separate from SWMU 4. The sludge is removed to a thickener and sent through a rotary vacuum filter. Dried sludge is trucked to the industrial landfill (SWMU 10). The wastewater from SWMU 4 is eventually discharged into Smithers Lake by internal outfalls 103, 203, 603, and 703.

Existing Permit

These outfalls are permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

The type and frequency of monitoring for outfalls 103, 203, 603, and 703 are covered in Subsections 2.4.1.1, 2.4.1.3, 2.4.1.5, and 2.4.1.7.

Concerns

Concerns and comments associated with the outfalls of this SWMU are discussed in Subsections 2.4.1.1, 2.4.1.3, 2.4.1.5, and 2.4.1.7.

2.4.1.5 SWMU 5—Inorganic Metal Cleaning Wastewater Surface Impoundment 1

Activity

The impoundment is an above-grade, fiberglass-lined concrete basin with two compartments holding 850,000 gallons each. It is used for the collection of inorganic metal cleaning wastes. These wastes include hydrochloric acid boiler cleaning wastes, boiler blowdown, and air preheater wash. The wastes are collected for treatment in Units 5 and 6 of SWMU 4 for pH adjustment, metal precipitation, and sedimentation. The metal cleaning inorganic sludge from the basin floors are periodically sent to the sludge dewatering system. The waste is classified as Class II waste. The treated wastewater is discharged through outfall 103 into Smithers Lake.

Existing Permit

Outfall 103 is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfall 103 is monitored daily for flow rate and weekly for TSS, oil and grease, iron, and copper.

Concerns

The current compliance status of outfall 103 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences for this outfall.

2.4.1.6 SWMU 6—Inorganic Metal Cleaning Wastewater Surface Impoundment 2

Activity

The impoundment is actually a sump for discharge to SWMU 5 that consists of two below-grade, fiberglass-lined concrete basins holding 21,000 gallons and 54,000 gallons. The waste is classified as Class II waste. The treated wastewater is discharged through outfall 103 into Smithers Lake.

Existing Permit

Outfall 103 is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfall 103 is monitored daily for flow rate and weekly for TSS, oil and grease, iron, and copper.

Concerns

The current compliance status of outfall 103 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences this outfall.

2.4.1.7 SWMU 7—Inorganic Metal Cleaning Wastewater Surface Impoundment 3

Activity

The impoundment is an above-grade, fiberglass-lined concrete basin with two compartments holding 1,189,000 gallons each. The basin collects inorganic metal cleaning wastes, including hydrochloric acid boiler cleaning wastes, boiler blowdown, and air preheater wash prior to treatment in SWMU 4. The sludge from the basin floor is periodically sent to the sludge dewatering system. The waste is classified as Class II waste. The treated wastewater is discharged through internal outfall 603 into Smithers Lake.

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Existing Permit

Outfall 603 is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

The outfall is monitored daily for flow rate and weekly for TSS, oil and grease, iron, and copper.

Concerns

The current compliance status of outfall 603 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences for this outfall.

2.4.1.8 SWMU 8—Organic Metal Cleaning Waste Surface Impoundment

Activity

The impoundment is a below-grade, fiberglass-lined concrete basin with two compartments holding 173,922 gallons each. The organic metal cleaning wastes consist of hydroxyacetic-formic acid and ammoniated citric acid used in cleaning boilers and equipment. The waste is burned in two boilers. The boiler ash is stored in the industrial landfill (SWMU 10).

Existing Permit

The air emissions of the two boilers are permitted under TNRCC permit number 5794.

Monitoring

Air emissions monitoring is conducted by collecting a wastewater sample from each concrete basin prior to injection into the boilers. The wastewater is sampled for metallic oxides and salts, chlorides, fluorides, and nitrates. Additional monitoring of these units is related to the 1990 Clean Air Act and the Acid Rain Provisions as specified under 40 CFR 75. This consists of continuous stack monitoring of nitrogen oxides (NO_x), sulfur dioxide (SO₂), and carbon dioxide (CO₂) along with stack flow and opacity.

Concerns

Information concerning the compliance status of the boilers was not available. However, the existing air permit indicated that the stacks of the boilers are continuously monitored. In addition, to insure compliance with the permit requirements, a wastewater sample is collected from each concrete basin and analyzed prior to injection into the boilers. When verification of the chemical constituent ranges in the permit is confirmed, then permission to inject the wastewater into the boiler is given.

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2.4.1.9 SWMU 9—Inorganic Acid/Ash Collection Surface Impoundments

Activity

In 1977, three inorganic collection surface impoundments comprised of 0.56 acres (500,000 gallons), 0.75 acres (1,000,000 gallons), and 4.27 acres (5,000,000 gallons) were excavated for temporary use during the construction of two units of the chemical waste treatment system. On an intermittent basis, the natural clay-lined impoundments were used for the disposal of a mixture of chemical cleaning waste from the feedwater and boiler. In 1978, analytical results and information based on waste sampling of the temporary surface impoundments indicated that the waste reportedly contained concentrations of metals: chromium, copper, manganese, zinc, iron, and sodium. No wastewater entered the three impoundments after early 1980. By March 1982, waste was removed from all three impoundments, backfilled, and graded over. Soil was not removed from the impoundment during this activity.

Existing Permit

No permits are associated with this SWMU.

Monitoring

No monitoring is associated with this SWMU.

Concerns

According to McClelland Engineers 1978 geotechnical report, the geology in the SWMU 10 area provides a natural clay liner that exhibits a coefficient of permeability of 1.0×10^{-7} centimeters per second (cm/sec) or lower. Contaminants that could migrate to groundwater may be contained by the natural clay soils, however, no studies have been done in the area of SWMU 9. In 1982, the ponds were reportedly backfilled and graded over, thus preventing runoff from the SWMU. The low volatility of the contaminants of concern (metals) greatly diminish the risk of air exposure.

2.4.1.10 SWMU 10—Industrial Landfill and Overflow Collection Pond

Activity

The industrial landfill consists of four cells for the storage of fly, bottom ash, and Class II industrial waste. In Cell 2, fly ash and bottom ash are blended before being spread in the cell to produce a more stable product. Cell 3 at the time of WESTON's site reconnaissance was a new and unused cell designated for bottom ash, and Cell 1A contained Class II industrial waste. Cell 1 contained Class II nonhazardous waste and was closed in 1989. Each landfill cell has a collection pond, which collects the runoff from that cell. All runoff from the landfill cells is pumped to an overflow settling basin pond. The water from the overflow pond is discharged through outfall 004 into Smithers Lake.

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Existing Permit

Air emissions from the fly ash and bottom ash disposal system are permitted under the TNRCC Permit No. 5430A. Discharge through outfall 004 is permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Air emissions of the fly ash and bottom ash blending facility and Cells 2, 3, and 1A are monitored for particulate matter. The discharge through outfall 004 is monitored daily for flow rate, TSS, and oil and grease and bi-monthly for selenium. Chronic biomonitoring tests are conducted quarterly. Although not required by any permit, nine monitoring wells are located around the landfill cells and the overflow pond. These wells are sampled biannually. Samples are analyzed for alkalinity, pH, specific conductance, temperature, turbidity, total dissolved solids, metals, chloride, fluoride, phosphorus, and sulfate.

Concerns

Based on the PA report and observations made during WESTON's site reconnaissance, all of the SWMUs' cells have synthetic liners. The four existing cells in the landfill area also have a 3-foot natural clay liner. Based on McClelland Engineer's geotechnical investigation, this clay liner has a coefficient of permeability of 1.0×10^{-7} cm/sec or lower. The overflow pond has a 40 mil (0.040 inches) synthetic liner overlying the natural 3-foot clay liner.

WESTON reviewed the analytical data from the most recent groundwater monitoring sampling event. In October 1996, nine groundwater samples were collected from the nine groundwater monitoring wells located around the industrial landfill area. Groundwater monitoring data generated from the sampling event reported low levels of metals, well below the MCLs in drinking water.

The current compliance status of outfall 004 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported no exceedences for this outfall.

2.4.1.11 SWMU 11—Waste Oil and Sludge Collection Facilities

Activity

Three separate waste oil and sludge collection facilities have been documented in previous reports. All three locations are shown on Figure 2-2 (Site Plan Map); however, only two locations were observed during the site reconnaissance. In general, the floor drains in the two observed facilities are located in work locations where potential oil spillage could occur and in equipment operation areas. The floor drains also serve as a containment mechanism for containing rainwater runoff. All of the floor drain treatment system liquid is routed through the facilities oil/water separator and/or concrete lined settling basin. The oil is skimmed from the

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wastewater and drummed and stored in a less-than-90-day storage area (SWMU 12) for off-site disposal. The wastewater is routed through outfalls 005, 303, and 803 into Smithers Lake.

Existing Permit

The outfalls are permitted under the NPDES program and under TNRCC discharge permit number TX0006394.

Monitoring

Discharge from outfalls 005, 303, and 803 is monitored daily for flow rate and weekly for TSS and oil and grease. The pH of discharge from outfall 005 is monitored weekly.

Concerns

The current compliance status of outfalls 005, 303, and 803 is unknown. However, the exceedence summary for January 1996 to June 1997 submitted to TNRCC reported one exceedence of TSS from outfall 005, two exceedences of oil and grease from outfall 303, and one exceedence of oil and grease from outfall 803. Most of these exceedences were caused by equipment failures or excessive rainfall. Repairs were completed and procedures were updated. No other exceedences for these outfalls were reported.

2.4.1.12 SWMU 12—90-Day Maximum Hazardous Waste Storage Area

Activity

This area is an outside 90-day maximum hazardous waste storage area consisting of a concrete slab for storage of drums and tanks. Wastes are stored in tanks or drums prior to being shipped off-site to approved hazardous waste treatment facilities. Drums are stored on wooden pallets. Aboveground tanks are contained within 1-foot concrete dikes. One of the waste oil collection facilities (SWMU 11) is contained within the storage area.

Existing Permit

No permits are associated with this SWMU.

Monitoring

No monitoring is associated with this SWMU.

Concerns

There are no concerns associated with the SWMU.

2.4.1.13 SWMU 13—Bulk Storage Area

Activity

The 1990 PA identified a bulk storage area that used bins for the storage of lead-contaminated blasting material prior to off-site disposal. However, during WESTON's site reconnaissance, Houston Lighting and Power indicated that a designated bulk storage area does not exist, but a general area where the bins are used is identified on the Site Plan Map (Figure 2-2). The bins were used during intermittent maintenance.

Existing Permit

No permits are associated with this SWMU.

Monitoring

No monitoring is associated with this SWMU.

Concerns

There are no concerns associated with the SWMU.

2.4.1.14 SWMU 14—Nonhazardous Construction Debris Landfill

Activity

This unit contains only construction demolition nonhazardous waste.

Existing Permit

No permits are associated with this SWMU.

Monitoring

No monitoring is associated with this SWMU.

Concerns

There are no concerns associated with the SWMU.

2.4.2 Summary of Waste Source Characterization

Table 2-1 at the end of this section summarizes the characterization of each waste source.

2.4.3 Waste Source Conclusions

Based on available background information and WESTON's site reconnaissance, the sources at the site consist of seven surface impoundments (SWMUs 1 through 3 and 5 through 8), a chemical waste treatment system (SWMU 4), the closed acid collection/ash surface impoundment (SWMU 9), an industrial landfill area with an overflow pond (SWMU 10), a waste oil and sludge collection facility, and a less-than-90-day hazardous waste storage area (SWMU 12). According to available information, the constituents of concern are mainly metals. However, migration of contaminants of concern are inhibited by liners in the surface impoundments, landfill cells, and overflow pond and a concrete pad in the storage area. These areas are monitored for discharge exceedences by TNRCC under NPDES and air permits and are controlled by run-on and stormwater collection systems. The facility also has it's own Spill Prevention Control and Countermeasures (SPCC) and Pollution Prevention (PPP) Plans. In addition, the three temporary acid collection/ash surface impoundment ponds were backfilled and closed in 1982.

The bulk storage area (SWMU 13) and nonhazardous landfill (SWMU 14) do not pose any potential hazard to human health or the environment, because the storage area is used intermittently during maintenance and the waste stored in the landfill is nonhazardous.

2.4.4 Site Concerns

Possible concerns associated with potential waste sources at the site are the migration of or exposure to hazardous substances attributable to the site through the groundwater, surface water, soil exposure, and air pathways.

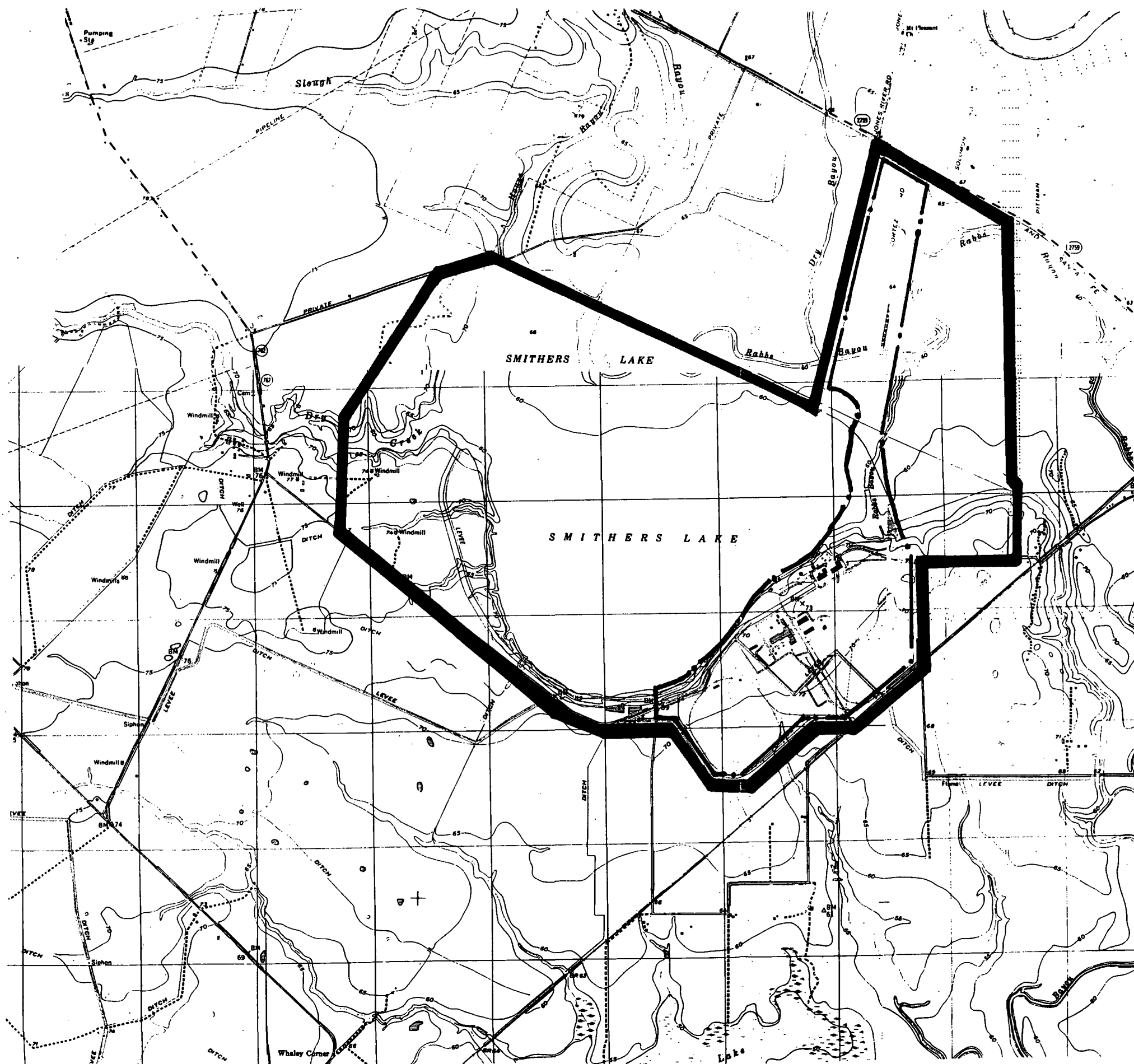
- A release to groundwater is of minor concern. The open surface impoundments have fiberglass liners within concrete. The landfill cells have a natural clay liner that has a coefficient of permeability of 1.0×10^{-7} cm/sec or lower. The closed surface impoundments may have a natural clay liner, however, studies of this area have not been conducted. The 90-day hazardous waste storage area consists of a concrete slab. The tanks stored in this area have secondary containment. Analytical data from the October 1996 monitoring wells sampling event indicated the existence of low levels of metals in the groundwater at the site. However, these levels were below the MCLs for drinking water.
- A release to surface water is of minor concern. All outfalls from the facilities are regulated by TNRCC and are under a NPDES permit. The outfalls are monitored for flow rate, suspended solids, pH, and certain metals of concern. Exceedences and discharges are reported routinely. However, exceedences that have occurred were of short duration due mainly to mechanical failures and excessive rainfall. Necessary repairs were made and procedures were reviewed and revised to mitigate the potential for releases. In addition, the oil drainage collection system also serves as a mechanism for containing rainwater runoff for the facility.

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- Soil exposure is of low concern. Much of the facility is covered by buildings and concrete, the entire site is enclosed by a fence, and the plant entrance is monitored by a guard. There are approximately 400 on-site workers.
- A release to air is of low concern. The constituents of concern are metals and have a low volatility. In addition, the boiler stacks and the fly ash and bottom ash hopper are regulated by TNRCC under a current air permit.

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N



LEGEND

- HL&P PROPERTY BOUNDARY
- SITE BOUNDARY



BASE MAP FROM:
U.S. DEPT. OF THE INTERIOR
GEOLOGICAL SURVEY
SMITHERS LAKE QUADRANGLE
MISSOURI CITY QUADRANGLE
SUGAR LAND QUADRANGLE
THOMPSONS QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
1953 & 1970 SERIES

0 1200 2400
APPROXIMATE SCALE IN FEET

WESTON
MAN-ERS DESIGNERS/CONSULTANTS

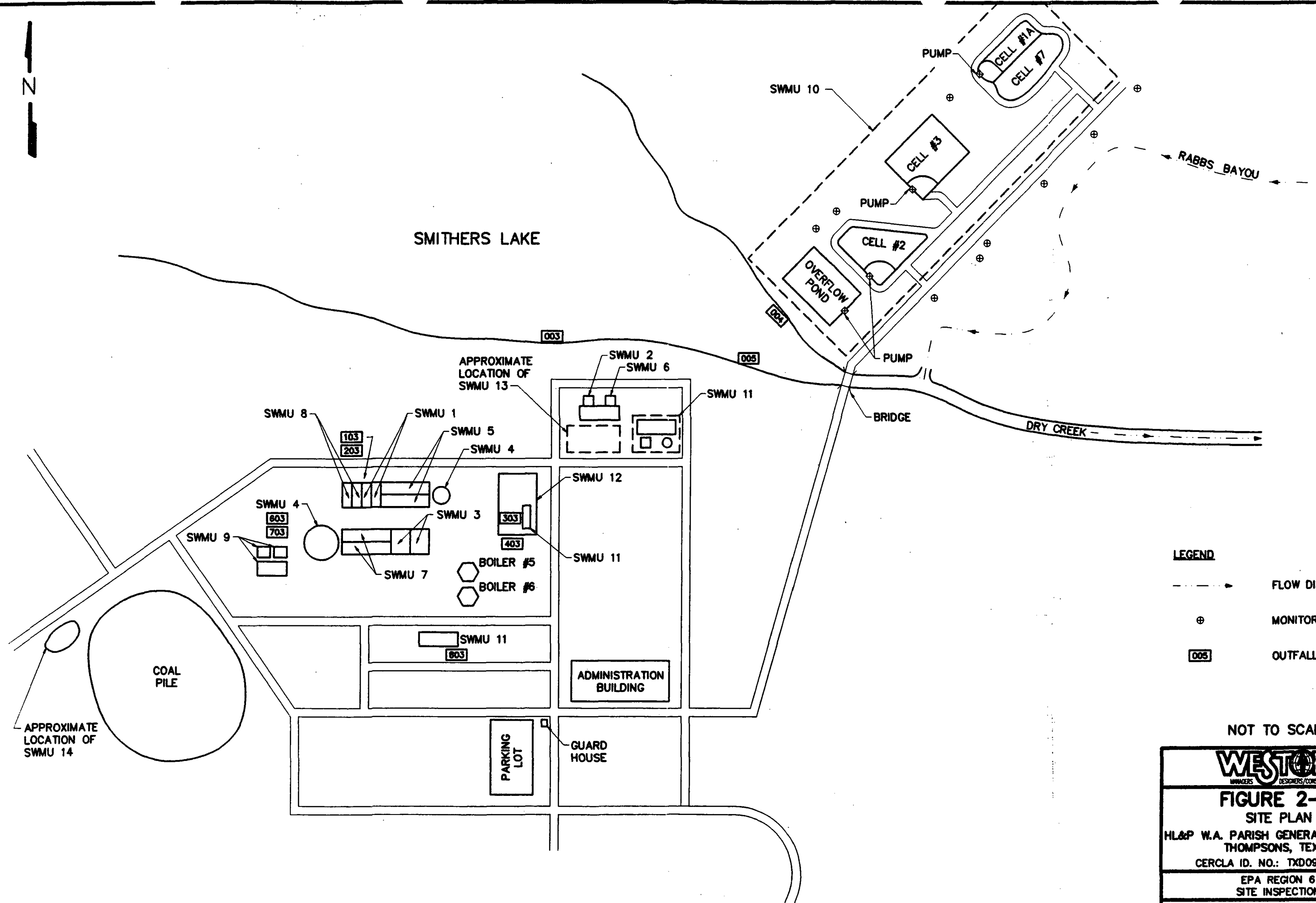
FIGURE 2-1
SITE AREA MAP

HL&P W.A. PARISH GENERATING STATION
THOMPSONS, TEXAS

CERCLA ID. NO.: TXD097811849

EPA REGION 6
SITE INSPECTION

W.O. NO. : 11098-112-027-0001



LEGEND

- FLOW DIRECTION
- MONITORING WELL
- OUTFALL

NOT TO SCALE

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2-2
SITE PLAN

HL&P W.A. PARISH GENERATING STATION
THOMPSONS, TEXAS

CERCLA ID. NO.: TXD097811849

EPA REGION 6
SITE INSPECTION

W.O. NO. : 11098-112-027-0001

**HOUSTON LIGHTING AND POWER W.A. PARISH GENERATING STATION
THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

TABLE 2-1

SUMMARY OF POTENTIAL WASTE SOURCES

SWMU	DESCRIPTION	PERMIT	MONITORING TYPE/FREQUENCY	CONTAINMENT FEATURES	BASIS OF CONCERN
1	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS.	Fiberglass liner within concrete basin.	Low on all concern associated with this source.
2	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS.	Fiberglass liner within concrete basin.	No concern associated with this source.
3	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS and oil and grease.	Fiberglass liner within concrete basin.	Between January 1996 and June 1997, one exceedence of oil and grease was reported. Procedures for this system are being reviewed. No other exceedences were reported.
4	Steel Clarifiers and Sludge Dewatering	NPDES	Outfalls are monitored daily for flow rate and weekly for one or more of TSS, and oil and grease	6-inch concrete curbed dike designed to direct spills or runoff into a collection sump. The collected water from the sump is sent back to the wastewater treatment system.	No concern associated with this source.
5	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS, oil and grease, iron, and copper.	Fiberglass liner within concrete basin.	No concern associated with this source.

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**HOUSTON LIGHTING AND POWER W.A. PARISH GENERATING STATION
THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

TABLE 2-1 (Continued)

SUMMARY OF POTENTIAL WASTE SOURCES

SWMU	DESCRIPTION	PERMIT	MONITORING TYPE/FREQUENCY	CONTAINMENT FEATURES	BASIS OF CONCERN
6	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS.	Fiberglass liner within concrete basin.	No concern associated with this source.
7	Surface Impoundment	NPDES	Outfalls are monitored daily for flow rate and weekly for TSS, oil and grease, iron, and copper.	Fiberglass liner within concrete basin.	No concern associated with this source.
8	Surface Impoundment	TNRCC Air Permit	Wastewater is sampled for metallic oxides and salts, chlorides, fluorides, and nitrates prior to injection into boilers for confirmation of permitted limits. Stacks of the boilers are continuously monitored for NO _x , SO ₂ , CO ₂ , flow rate, and opacity.	Fiberglass liner within concrete basin.	No concern associated with this source.
9	Three Surface Impoundments	Not Applicable [Closed]	Not Applicable	Natural clay liner. Ponds existed from 1977 to 1982. Wastewater was emptied from the ponds, and the ponds were backfilled and graded over.	No concern associated with this source.

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**HOUSTON LIGHTING AND POWER W.A. PARISH GENERATING STATION
THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

TABLE 2-1 (Continued)

SUMMARY OF POTENTIAL WASTE SOURCES

SWMU	DESCRIPTION	PERMIT	MONITORING TYPE/FREQUENCY	CONTAINMENT FEATURES	BASIS OF CONCERN
10	Industrial Landfill and Overflow Pond	TNRCC Air Permit NPDES	Air emissions of the fly ash and bottom ash blending facility are monitored for particulate matter. Wastewater from the overflow pond is monitored daily for flow rate, TSS, and oil and grease and bi-monthly for selenium. Chronic biomonitoring tests are conducted quarterly. Monitoring wells around the landfills and overflow pond are sampled biannually.	The landfill cells have a 3-foot natural clay liner that has a coefficient of permeability of 1.0×10^{-7} cm/sec or lower. The overflow pond has a 40 mil synthetic liner with a natural 3-foot clay liner underneath.	Based on available information, a release to groundwater from this SWMU has not been documented.
11	Waste Oil and Sludge Collection Facilities	NPDES	The three outfalls associated with the SWMU are monitored daily for flow rate and weekly for TSS and oil and grease.	The settling basins are concrete lined.	From January 1996 to June 1997, four exceedences of TSS and oil and grease were reported.

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**HOUSTON LIGHTING AND POWER W.A. PARISH GENERATING STATION
THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

TABLE 2-1 (Continued)

SUMMARY OF POTENTIAL WASTE SOURCES

SWMU	DESCRIPTION	PERMIT	MONITORING TYPE/FREQUENCY	CONTAINMENT FEATURES	BASIS OF CONCERN
11 (continued)	Waste Oil and Sludge Collection Facilities	NPDES	The outfall that discharges directly into Smithers Lake (005) is monitored weekly for pH levels.	<p>The waste oil and oil sludge collected from the basins are drummed and stored at SWMU 12 for off-site disposal.</p> <p>The oil drainage collection system also serves as a mechanism for containing rainwater runoff for the facility.</p>	<p>These exceedences were mainly due to mechanical failures and excessive rainfall.</p> <p>Repairs were made and procedures have been revised, and no other exceedences were reported thereafter.</p>
12	Waste Storage Area	Not Applicable	Not Applicable	<p>The area is a 90-day maximum hazardous waste outside storage area consisting of a concrete slab.</p> <p>Drums are placed on wooden pallets.</p> <p>Aboveground tanks are contained with 1-foot concrete dikes.</p>	No concern associated with this source.

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THOMPSONS, FORT BEND COUNTY, TX
EPA CERCLA ID NO.: TXD097311849**

TABLE 2-1 (Continued)

SUMMARY OF POTENTIAL WASTE SOURCES

SWMU	DESCRIPTION	PERMIT	MONITORING TYPE/FREQUENCY	CONTAINMENT FEATURES	BASIS OF CONCERN
13	Bulk Storage Area	Not Applicable	Not Applicable	Not Applicable	No concern associated with this source.
14	Nonhazardous Landfill	Not Applicable	Not Applicable	Not Applicable	No concern associated with this source.

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SECTION 3

EXPOSURE AND MIGRATION PATHWAY CHARACTERISTICS

Information regarding the groundwater, surface water, soil exposure, and air pathways are presented in the following sections. Sampling and nonsampling data collected to date are addressed. Known data gaps are identified at the end of the section.

3.1 GROUNDWATER PATHWAY

Information concerning the groundwater pathway, generally one of the primary routes of potential hazardous substance migration and exposure, is summarized in the following subsections.

3.1.1 Hydrogeologic Description

The HL&P site is located in the western Gulf Coastal Plain geologic region on the Beaumont Formation and the alluvium of the Brazos River. The Beaumont Formation is principally a poorly bedded, calcareous clay containing thin discontinuous stringers and lenses of silt, sand, and fine sand (Reference 10).

The Beaumont Formation is part of a hydro-stratigraphic unit known as the Chicot aquifer. The thickness of the aquifer increases toward the Gulf of Mexico from zero at the western edge of the Quaternary outcrop (80 miles from the gulf) to more than 1,200 feet at the gulf. The Evangeline aquifer immediately underlies the Chicot aquifer. The Evangeline aquifer thickness is greater, up to 2,000 feet, near the gulf. Both major aquifers indicate regional water flow toward the gulf.

Potentiometric surface maps produced by ERM Southwest, Inc. indicate that groundwater in the vicinity of the site flows in a northeastward direction (Reference 29). Localized flow directions are controlled by surface water bodies including Smithers Lake and the Brazos River. Measurement to depth of groundwater in the boreholes drilled during McClelland Engineers' 1978 geotechnical investigation of the industrial landfill area indicated that the depth to water is 8 to 10 feet below ground surface (bgs) (Reference 10).

3.1.2 Likelihood to Release

Based on available information, a release to groundwater has not been documented at the site. In October 1996, nine groundwater samples were collected from the nine groundwater monitoring wells located around the industrial landfill area (Reference 23). Groundwater monitoring data generated from the sampling event reported low levels of metals. However, these levels were well below the MCLs in drinking water.

Based on the PA report and observations made during WESTON's site reconnaissance, most of the SWMUs have some type of liner (References 4 and 5). The liners of the surface impoundments, chemical waste treatment systems, and container storage area are made of

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concrete. The four existing cells in the landfill area have a 3-foot natural clay liner. Based on McClelland Engineers' geotechnical investigation, this clay liner has a coefficient of permeability of 1.0×10^{-7} cm/sec or lower (Reference 10). The overflow pond has a 40 mil synthetic liner overlying a 3-foot natural clay liner. SWMU 9, the former temporary storage ponds, may be lined by a 3-foot natural clay liner.

3.1.3 Groundwater Pathway Targets

According to Houston Lighting and Power, there are nine monitoring wells and seven potable water wells on-site (References 5 and 6). Groundwater is a major source of water supply, providing water for residential use, irrigation of crops, livestock watering, and industrial use (References 12, 30, and 31). Seven irrigation, 28 private drinking water, 10 stock, and 14 public supply wells have been identified within a 4-mile radius of the site (Reference 32).

3.2 SURFACE WATER PATHWAY

Available information concerning the surface water pathway is summarized in the following subsections.

3.2.1 Hydrogeologic Description

According to the PA and observations made during the site reconnaissance, treated wastewater from the power generating facility is discharged into Smithers Lake (References 4 and 5). All run-on to the industrial landfill cells is pumped into an overflow pond, settles in the basin, and then is discharged into Smithers Lake. All outfalls to Smithers Lake from the site are regulated under a NPDES permit.

The PA described the local topography as relatively flat with Smithers Lake at the highest elevation. Natural drainage flows from Smithers Lake to lower elevations through Dry Creek, Rabbs Bayou, and unnamed tributaries to the Brazos River (Reference 4). Flood maps indicate a continued interaction between Smithers Lake and the northern section of Rabbs Bayou (Reference 33).

3.2.2 Likelihood to Release

Based on available information, a release to surface water has not occurred. The drainage system in the industrial landfill area was designed to collect all run-on from the landfill cells into collection ponds. The water is then pumped from the collection ponds into an overflow settling pond. The wastewater is then pumped into Smithers Lake under a NPDES permit. All outfalls into Smithers Lake are regulated by TNRCC under a NPDES permit and are monitored for discharge exceedences. From January 1996 to June 1997, five NPDES permit exceedences of the associated outfalls were reported that were mainly caused by mechanical failures. These failures were corrected, and procedures associated with the operations of the SWMUs are either being reviewed or updated. In addition, the waste oil/oil sludge collection facilities are designed to

collect all stormwater from the power plant facility area. The water is discharged NPDES outfalls to Smithers Lake.

3.2.3 Surface Water Pathway Targets

Surface water pathway targets include drinking water intakes, fisheries, sensitive environments, and other resources that rely on surface water. There are no drinking water intakes. Livestock are occasionally watered from Rabbs Bayou (Reference 4). The PA reported that Worthington Lake, approximately 5 miles downstream, was a bald eagle rookery. Other threatened and endangered species inhabiting Fort Bend County are the Houston toad, American peregrine falcon, arctic peregrine falcon, whooping crane, Eskimo curlew, brown pelican, white-faced ibis, Attwater's greater prairie-chicken, black bear, timber/canebrake rattlesnake, Texas tortoise, and Texas horned lizard (Reference 34).

3.3 SOIL EXPOSURE

Information concerning the soil exposure threat is provided in the following subsections.

3.3.1 Surficial Conditions

Based on observations made during the site reconnaissance, the power plant facility portion of the site is mostly covered by buildings, the plant, a parking lot, and concrete (Reference 5 and Appendix A). Soils at the location of the industrial landfills are classified as the Bernard-Edna series. The Bernard-Edna series is a somewhat poorly drained, very slowly permeable, upland soil. It has a slightly acid, very dark gray clay loam surface, and a very dark gray clay subsoil that is slightly acid in the upper part and neutral to moderately alkaline in the lower part. Slopes range from 0 to 5%, but are mainly less than 1% (Reference 35).

3.3.2 Likelihood of Exposure

Based on observations made during the site reconnaissance and available background information, the site is active, but access to the site is restricted by a perimeter fence. A guard is on duty during the day at the entrance to the plant, otherwise, the entrance is locked. The power plant facility is covered by buildings, concrete, and a parking lot. Three temporary ponds were backfilled and graded over in 1982. Cell 1 in the industrial landfill was closed in 1989.

3.3.3 Soil Exposure Targets

The HL&P site currently consists of an active coal and gas-fired steam-driven electrical generating plant. Approximately 400 workers are present on-site. No residences or schools are located adjacent to the site.

No terrestrial sensitive environments have been identified at the site, and no resources have been identified within the soil exposure pathway.

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3.4 AIR PATHWAY

Information concerning the air pathway is presented in the following subsections.

3.4.1 Atmospheric Conditions

Information concerning the weather conditions and patterns in the site vicinity have not been identified.

3.4.2 Likelihood to Release

Based on available information, a release to air has not been documented. A significant release to air is not probable, because the potential contaminants of concern have a low volatility. In addition, the air emissions from the boilers associated with SWMU 8 and the hoppers associated with SWMU 10 are regulated by TNRCC under two air permits.

3.4.3 Air Pathway Targets

Potential targets of the air pathway include on-site workers, the nearby population working and living within 4 miles of the site, as well as any sensitive environments that may be in the area. There are approximately 400 workers on-site (Reference 5). According to the PA, land use around the site is primarily livestock ranching and isolated rice growing (Reference 6). Approximately 2 miles away from the site is a bald eagle rookery. The Houston toad, American peregrine falcon, arctic peregrine falcon, whooping crane, Eskimo curlew, brown pelican, white-faced ibis, Attwater's greater prairie-chicken, black bear, timber/canebrake rattlesnake, Texas tortoise, and Texas horned lizard inhabit Fort Bend County (Reference 34).

3.5 DATA GAPS

Based on review of the available background information and observations made during the off-site reconnaissance, the data gaps identified for the site include identification of sensitive environments and an evaluation of atmospheric and climatic conditions at the site.

SECTION 4

SAMPLING VISIT ACTIVITIES

4.1 BACKGROUND INFORMATION

As previously discussed in Section 2, based on available background information and WESTON's site reconnaissance, the sources at the site consist of seven surface impoundments (SWMUs 1 through 3 and 5 through 8), a chemical waste treatment system (SWMU 4), the closed acid collection/ash surface impoundment (SWMU 9), an industrial landfill area with an overflow pond (SWMU 10), a waste oil and sludge collection facility, and a less-than-90-day hazardous waste storage area (SWMU 12). According to available information, the constituents of concern are mainly metals. However, migration of contaminants of concern are inhibited by liners in the surface impoundments, landfill cells, and overflow pond and a concrete pad in the storage area. These areas are monitored for discharge exceedences by TNRCC under NPDES and air permits and are controlled by run-on and stormwater collection systems. The facility also has it's own Spill Prevention Control and Countermeasures (SPCC) and Pollution Prevention (PPP) Plans. In addition, the three temporary acid collection/ash surface impoundment ponds were backfilled and closed in 1982.

The bulk storage area (SWMU 13) and nonhazardous landfill (SWMU 14) do not pose any potential hazard to human health or the environment, because the storage area is used intermittently during maintenance and the waste stored in the landfill is nonhazardous.

4.2 WESTON SAMPLING ACTIVITIES

No field sampling activities will be performed by WESTON during this SI. Under authorization and direction from EPA, WESTON will use all available historical data to complete the SI report.

4.3 REPORT PREPARATION

After reviewing and summarizing the available historical data, WESTON will prepare the final report for the SI. The report format will include the following:

- An introduction section describing the background and purpose of the investigation.
- A site characteristics section describing the site location, operating history, source waste characteristics, and site concerns.
- Individual sections for the groundwater, surface water, soil exposure, and air pathways describing the environmental conditions at the site, the likelihood of a release, targets, and relevant analytical data.

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- **A summary and conclusions section discussing the major site concerns.**

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SECTION 5

PROJECT INFORMATION

This section outlines basic project management information for the SI. Details concerning key personnel and the project schedule are provided. Reference should be made to WESTON's Generic Site Inspection Work Plan for more detailed information concerning WESTON's project management plan.

5.1 PROJECT SCHEDULE

The overall project schedule is summarized in Table 5-1.

TABLE 5-1
PROJECT SCHEDULE (1997)

TARGET MILESTONES	MAY	JUN	JUL	AUG	SEP
SITE RECONNAISSANCE					
WORK PLAN SUBMITTAL TO EPA					
WORK PLAN REVIEW/APPROVAL BY EPA					
REPORT WRITING					
REPORT QUALITY ASSURANCE					
REPORT SUBMISSION					

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SECTION 6 REFERENCES

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APPENDIX A

HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN (HSPP)

Prepared by:

W.O. Number: 11098-112-027-0001-03 Date: 5/20/97

Project Identification:

Division: NTR002 - Houston
 Department/Office: 1169
 Site Name: HLP Parish Station
 Client: US EPA - START
 Work Location Address: 2759 Jones Road
 Thompsons, TX

Site History: (describe briefly)

Site is an active electricity generating station.

Scope of Work: (describe briefly)

Site reconnaissance visit

☐ Site visit only; site HASP not necessary. List personnel here and sign off below:

Regulatory Status:

Site regulatory status:

CERCLA/SARA RCRA Other Federal Agency

☒ US EPA ☐ US EPA ☐ DOE
☐ State ☐ State ☐ USACE
☐ NPL Site **NRC** ☐ Air Force
OSHA ☐ 10 CFR 20 ☐ _____
☒ Hazard Communication (Req'd See Attachment "D")
☒ 1910 ☐ 1926 ☐ State

☒ **Safety Officer Manual (Required to be On Site)**

Based on the Hazard Assessment and Regulatory Status, determine the Standard HASP(s) applicable to this project. Indicate below which Standard HASP will be used and append the appropriate pages of this form along with the Standard Plan.

☐ Stack Test ☐ _____
☐ Air Emissions ☐ _____
☐ Asbestos ☐ _____
☐ Industrial Hygiene ☐ _____
☐ _____ ☐ _____

Review and Approval Documentation:

Reviewed by:
DSO/RSO/CHS

JOE RAY
Name (Print)

Joe Ray
Signature

Date: 5/21/97

Other

Name (Print)

Signature

Date: _____

Approved by:

Project Director/
Project Manager

Dan MacLamore
Name (Print)

Dan MacLamore
Signature

Date: 5-21-97

Hazard Assessment and Equipment Selection

In accordance with WESTON's Personal Protective Equipment Program and 29 CFR 1910.132 at the site prior to personnel beginning work the SHCS and/or the Site Manager have evaluated conditions and verified that the personal protective equipment selection outlined within this HASP is appropriate for the hazards known or expected to exist. (Refer to Safety Officer Manual Section 2 Personal Protection Program for Guidance)

☒ SHSC ☐ Site Manager

Name (Print)

Signature

Date: _____

Project start date: 22 May 1997
End date: 22 November 1997

This site HASP must be reissued/reapproved for any activities conducted after:

Date: 22 November 1997

Amendment date(s):

By:

- 1.
- 2.
- 3.
- 4.
- 5.

WESTON REPRESENTATIVES

Organization/Branch	Name/Title	Address	Telephone
Weston	Dan MacLemore Project Manager	5599 San Felipe, Suite 700 Houston, TX 77056	(713) 621-1620
Weston	Carol LaBrecche Project Team Leader	5599 San Felipe, Suite 700 Houston, TX 77056	(713) 621-1620
Weston	Joy Page Field Team Leader	5599 San Felipe, Suite 700 Houston, TX 77056	(713) 621-1620

Roles and Responsibilities:

WESTON SUBCONTRACTORS

Organization/Branch	Name/Title	Address	Telephone

Roles and Responsibilities:

SITE SPECIFIC HEALTH AND SAFETY PERSONNELThe Site Health and Safety Coordinator (SHSC) for activities to be conducted at this site is: Joy Page

The SHSC has total responsibility for ensuring that the provisions of this Site HASP are adequate and implemented in the field.

Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, the personnel assigned as SHSCs are experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120

Qualifications: At a minimum, the SHSC will be a WESTON-certified Level 0 SHSC. Training includes: OSHA 40-hr. hazardous waste training & current refresher training as applicable, current First-aid, CPR, blood-borne pathogen, dangerous goods, shipping, and WESTON SHSC training.

Designated alternates include: Eric Tate

HEALTH AND SAFETY EVALUATION

Hazard Assessment

Background Review:

☐ Complete

☒ Partial

If partial why?

Only TCLP results (analytical)

Activities Covered Under This Plan:

No.	Task/Subtask	Description	Schedule
1.	Site Reconnaissance	Site walk-through with note-taking and photographs.	May 1997

Types of Hazards:



Numbers refer to one of the following hazard evaluation forms. Complete hazard evaluation forms for each appropriate hazard class.

Physiochemical ¹

☒ Flammable

☐ Explosive

☐ Corrosive

☒ Reactive

☐ O₂ Rich

☐ O₂ Deficient

Chemically Toxic ¹

☒ Inhalation

☐ Carcinogen

☒ Ingestion

☐ Mutagen

☒ Contact

☐ Teratogen

☒ Absorption

☐ OSHA 1910.1000 Substance
(Air Contaminants)

☐ OSHA Specific Hazard Substance
Standard
(Refer to HASP Form 04HASP.894 for Listing.)

Radiation ³

Ionizing:

☐ Internal exposure

☐ External exposure

Non-ionizing:

☐ UV

☐ IR

☐ RF

☐ MicroW

☐ Laser

Biological ²

☐ Etiological Agent

☐ Other (Plant, insect, animal)

☒ Physical Hazards ⁴

☐ Construction Activities

Source/Location of Contaminants and Hazardous Substances

Directly Related to Tasks

☒ Air

☐ Other Surface

☐ Groundwater

☒ Soil

☒ Surface Water

☐ Sanitary Wastewater

☐ Process Wastewater

☐ Other _____

Indirectly Related to Tasks - Nearby Process(es) That Could Affect Team Members:

☒ Client Facility

☐ Nearby Non-client Facility

Describe: *Electricity generating station*

☐ Client Briefing Arranged

HEALTH AND SAFETY EVALUATION - 1 CHEMICAL HAZARDS

☒ N/A

Chemical Contaminants of Concern

Provide the data requested for chemical contaminants on HASP Form 33HASP.894 or attach data sheets from an acceptable sources such as NIOSH pocket guide, condensed chemical dictionary, ACGIH TLV booklet, etc. List chemical and concentration below and locate data sheets in Appendix A of this HASP.

☒ N/A

Identify hazardous materials used or on-site and attach Material Safety Data Sheets (MSDS) for all reagent type chemicals, solutions, or other identified materials that in normal use in performing tasks related to this project could produce hazardous substances. Ensure that all subcontractors and other parties working nearby are informed of the presence of these chemicals and the location of MSDS's. Obtain from subcontractors and other parties lists of the hazardous materials they use or have on-site and identify location of MSDS's here. List chemicals and quantities below and locate MSDS in Appendix B of this HASP.

Chemical Name	Concentration (if known)	Chemical Name	Quantity
Antimony			
Barium			
Chromium			
Nickel			
Toluene			
Xylenes			

OSHA SITE SPECIFIC HAZARDOUS SUBSTANCES

The following substances may require specific medical, training, or monitoring based upon concentration or evaluation of risk. See the appropriate citation listed under 29 CFR 1910 or 1926 for additional information.

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> 1910.1001 Asbestos | <input type="checkbox"/> 1910.1002 Coal tar pitch volatiles | <input type="checkbox"/> 1910.1003 4-Nitrobiphenyl | <input type="checkbox"/> 1910.1004 alpha-Naphthylamine |
| <input type="checkbox"/> 1910.1005 [Reserved] | <input type="checkbox"/> 1910.1006 Methyl chloromethyl ether | <input type="checkbox"/> 1910.1007 3,3'-Dichlorobenzidine (and its salts). | <input type="checkbox"/> 1910.1008 bis-Chloromethyl ether |
| <input type="checkbox"/> 1910.1009 beta-Naphthylamine | <input type="checkbox"/> 1910.1010 Benzidine | <input type="checkbox"/> 1910.1011 4-Aminodiphenyl | <input type="checkbox"/> 1910.1012 Ethyleneimine |
| <input type="checkbox"/> 1910.1013 beta-Propiolactone | <input type="checkbox"/> 1910.1014 2-Acetylaminofluorene | <input type="checkbox"/> 1910.1015 4-Dimethylaminoazobenzene | <input type="checkbox"/> 1910.1016 N-Nitrosodimethylamine |
| <input type="checkbox"/> 1910.1017 Vinyl chloride | <input type="checkbox"/> 1910.1018 Inorganic arsenic | <input type="checkbox"/> 1910.1025 Lead | <input type="checkbox"/> 1910.1027 Cadmium |
| <input type="checkbox"/> 1910.1028 Benzene | <input type="checkbox"/> 1910.1029 Coke oven emissions | <input type="checkbox"/> 1910.1043 Cotton dust | <input type="checkbox"/> 1910.1044 1,2-dibromo-3-chloropropane |
| <input type="checkbox"/> 1910.1045 Acrylonitrile | <input type="checkbox"/> 1910.1047 Ethylene oxide | <input type="checkbox"/> 1910.1048 Formaldehyde | <input type="checkbox"/> 1910.1050 Methylenedianiline |

HEALTH AND SAFETY EVALUATION - 2 BIOLOGICAL HAZARDS OF CONCERN

☒ Poisonous Plants (FLD 43)

Location/Task No(s):

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☒ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ Insects (FLD 43)

Location/Task No(s):

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☐ Contact ☒ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ Snakes, Reptiles (FLD 43)

Location/Task No(s):

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☐ Contact ☒ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ Animals (FLD 43)

Location/Task No(s):

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☐ Contact ☒ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

FLD 43 – WESTON Biohazard Field Operating Procedures: Att. OP ☐

☐ Sewage

Location/Task No(s):

Source: ☐ Known ☐ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☐ No

Immunization required: ☐ Yes ☐ No

Tetanus Vaccination within Past 7 yrs: ☐ Yes ☐ No
 (see Note #1 below)

☐ Etiologic Agents (List)

Location/Task No(s):

Source: ☐ Known ☐ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion
☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☐ No

Immunization required: ☐ Yes ☐ No

FLD 44 – WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures: Att. OP ☒

FLD 45 – WESTON Bloodborne Pathogens Exposure Control Plan – Working with Infectious Waste: Att. OP ☐

Note #1: A tetanus injection is recommended every 10 years for employees with "normal exposure risks." However, if employees have frequent potential for exposure at "higher risk," as working with raw sewage, then a frequency of 7 years is recommended.

HEALTH AND SAFETY EVALUATION – 3 RADIATION HAZARDS OF CONCERN

NA

NONIONIZING RADIATION

Task #	Type of Nonionizing Radiation	Source Onsite	TLV/PEL	Wavelength Range	Control Measures	Monitoring Instrument		
	Ultraviolet							
	Infrared							
	Radio Frequency							
	Microwave							
	Laser							

IONIZING RADIATION

				DAC (μCi/mL)				
Task #	Radionuclide	Major Radiations	Radioactive Half-Life (Years)	D	W	Y	Surface Contamination Limit	Monitoring Instrument

HEALTH AND SAFETY EVALUATION - 4 PHYSICAL HAZARDS OF CONCERN

Phy.Haz.Cond.	Physical Hazard	Att.OP	Weston OP Titles
Loud noise	Hearing loss/disruption of communication		FLD01 - Noise Protection
Inclement weather	Rain/humidity/cold/ice/snow/lightning		FLD02 - Inclement Weather
Steam heat stress	Burns/displaced oxygen/wet working surfaces		FLD03 - Hot Process - Steam
Heat/Stress	Burns/hot surfaces/low pressure steam		FLD04 - Hot Process - LT3
Ambient heat stress	Heat rash/cramps/exhaustion/heat stroke	✓	FLD05 - Heat Stress Prevention/Monitoring
Cold Stress	Hypothermia/frostbite		FLD06 - Cold Stress
Cold/wet	Trench/paddy/immersion foot/edema		FLD07 - Wet Feet
Confined spaces	Falls/burns/drowning/engulfment/electrocution		FLD08 - Confined Space Entry
Explosive vapors	Thermal burns/impaction/dismemberment		FLD09 - Hot Work
Improper lifting	Back strain/abdomen/arm/leg muscle/joint injury	✓	FLD10 - Manual Lifting/Handling Heavy Objec
Uneven Surfaces	Vehicle accidents/slips/trips/falls	✓	FLD11 - Rough Terrain
Poor housekeeping	Slips/trips/falls/punctures/cuts/fires		FLD12 - Housekeeping
Structural integrity	Crushing/overhead hazards/compromised floors		FLD13 - Structural Integrity
Hostile persons	Bodily injury		FLD14 - Site Security
Remote Area	Slips/trips/falls/back strain/communication	✓	FLD15 - Remote Area
Improper Cyl.Handling	Mechanical injury/fire/explosion/suffocation		FLD16 - Pressure Systems - Compressed Gas
Water Hazards	Poor visibility/entanglement/drowning/cold stress		FLD17 - Diving
Water Hazards	Drowning/heat/cold stress/hypothermia/falls		FLD18 - Operation and Use of Boats
Water Hazards	Drowning/frostbite/hypothermia/falls/electrocution		FLD19 - Working Over Water
Vehicle Hazards	Struck by vehicle/collision		FLD20 - Traffic
Explosions	Explosion/fire/thermal burns		FLD21 - Explosives
Moving mechanical parts	Crushing/pinch points/overhead hazards		FLD22 - Heavy Equipment Operation
Moving mech.parts	Overhead hazard/electrocution		FLD23 - Cranes/Lifting Equipment Operation
Working at elevation	Overhead hazards/falls/electrocution		FLD24 - Aerial Lifts/Manlifts
Working at elevation	Overhead hazard/falls/electrocution		FLD25 - Working at Elevation
Working at elevation	Overhead hazard/falls/electrocution/slips		FLD26 - Ladders
Working at elevation	Slips/trips/falls/overhead hazards		FLD27 - Scaffolding
Trench Cave-in	Crushing/falling/overhead hazards/suffocation		FLD28 - Excavating/Trenching
Improper material handling	Back injury/crushing-from load shifts		FLD29 - Materials Handling
Physiochemical	Explosions/fires from oxidizing, flam./corr.material		FLD30 - Hazardous Materials Use/Storage
Physiochemical	Fire and explosion		FLD31 - Fire Prevention/Response Plan Requi
Physiochemical	Fire	✓	FLD32 - Fire Extinguishers Required
Structural integrity	Overhead/electrocution/slips/trips/falls/fire		FLD33 - Demolition
Electrical	Electrocution/shock/thermal burns		FLD34 - Utilities
Electrical	Electrocution/shock/thermal burns		FLD35 - Electrical Safety
Burns/Fires	Heat Stress/Fires/Burns		FLD36 - Welding/Cutting/Burning
Impact/thermal	Thermal burn/high pressure impaction/heat stress		FLD37 - High Pressure Washers
Impaction/electrical	Smashing body parts/pinching/cuts/electrocution		FLD38 - Hand and Power Tools
Poor visibility	Slips/trips/falls		FLD39 - Illumination
Fire/Explosion	Burns/impaction		FLD40 - Storage Tank
Communications	Disruption of Communications		FLD41 - Std. Hand/Emergency Signals
Energy/Release	Unexpected release of energy		FLD42 - Lockout/Tagout
Drilling hazards	Electrocution/overhead hazards/pinch points		2.5 - Drilling Safety Guide

TASK-BY-TASK RISK ASSESSMENT
(Complete One Sheet for Each Task)

TASK DESCRIPTION

Task 1 : Site Reconnaissance consisting of a site walk-through with note-taking and photographs.

EQUIPMENT REQUIRED/USED

(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

steel-toed boots, coveralls, OVA, mini RAM

POTENTIAL HAZARDS/RISKS

CHEMICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? The site is regularly analytically monitored w/results sent to TURCC.
All areas to be visited have non-hazardous wastes.

PHYSICAL

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What Justifies Risk Level? Trips, slips, falls, uneven ground

BIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What Justifies Risk Level? Fire ants, snakes, spiders

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? No known or suspected sources

LEVELS OF PROTECTION/JUSTIFICATION

Level 0 protection while on-site.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

Follow standard operating procedures as specified in the Weston SHSC manual.

TASK-BY-TASK RISK ASSESSMENT
(Complete One Sheet for Each Task)

TASK DESCRIPTION

EQUIPMENT REQUIRED/USED

(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

POTENTIAL HAZARDS/RISKS

CHEMICAL

☐ Hazard Present Risk Level: ☐ H ☐ M ☐ L

What Justifies Risk Level?

PHYSICAL

☐ Hazard Present Risk Level: ☐ H ☐ M ☐ L

What Justifies Risk Level?

BIOLOGICAL

☐ Hazard Present Risk Level: ☐ H ☐ M ☐ L

What Justifies Risk Level?

RADIOLOGICAL

☐ Hazard Present Risk Level: ☐ H ☐ M ☐ L

What Justifies Risk Level?

LEVELS OF PROTECTION/JUSTIFICATION

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

PERSONNEL PROTECTION PLAN

Engineering Controls

Describe Engineering Controls used as part of Personnel Protection Plan:

Task(s) *All*

Administrative Controls

Describe Administrative controls used as part of Personnel Protection Plan:

Task(s) *All*

Only Health & Safety meetings will be held to discuss pertinent HPS issues related to the site.

Personnel Protective Equipment

Action Levels for Changing Levels of Protection. Define Action Levels for up or down grade for each task:

Task(s) *All*

OVA: Based on historical TCLP data,
choose *toluene* as most toxic

$$\text{action level} = \frac{PEL/TLV}{2} \times R\% = \frac{100ppm}{2} \times 1.1 = 55 \text{ units}$$

mini-RAH: based on historical TCLP results
choose *antimony, barium & chromium*. Each
PEL/TLV = 0.5 mg/m^3

$$\text{Action level} = 0.25 \text{ mg/m}^3$$

Description of Levels of Protection

Level D	Level D Modified
<p>Task(s):</p> <p><input type="checkbox"/> Head</p> <p><input type="checkbox"/> Eye and Face</p> <p><input type="checkbox"/> Hearing</p> <p><input type="checkbox"/> Arms and Legs Only</p> <p><input checked="" type="checkbox"/> Appropriate Work Uniform <i>Coveralls</i></p> <p><input type="checkbox"/> Hand - Gloves</p> <p><input checked="" type="checkbox"/> Foot - Safety Boots <i>Steel toed</i></p> <p><input type="checkbox"/> Fall Protection</p> <p><input type="checkbox"/> Flotation</p> <p><input type="checkbox"/> Other</p>	<p>Task(s):</p> <p><input type="checkbox"/> Head</p> <p><input type="checkbox"/> Eye and Face</p> <p><input type="checkbox"/> Hearing</p> <p><input type="checkbox"/> Arms and Legs Only</p> <p><input type="checkbox"/> Whole Body</p> <p><input type="checkbox"/> Apron</p> <p><input type="checkbox"/> Hand - Gloves</p> <p><input type="checkbox"/> Gloves</p> <p><input type="checkbox"/> Gloves</p> <p><input type="checkbox"/> Foot - Safety Boots</p> <p><input type="checkbox"/> Boots</p> <p><input type="checkbox"/> Boots</p>

Description of Levels of Protection

Level C <i>NA</i>	Level B <i>NA</i>
Task(s): <input type="checkbox"/> Head <input type="checkbox"/> Eye and Face <input type="checkbox"/> Hearing <input type="checkbox"/> Arms and Legs Only <input type="checkbox"/> Whole Body <input type="checkbox"/> Apron <input type="checkbox"/> Hand - Gloves <input type="checkbox"/> Gloves <input type="checkbox"/> Gloves <input type="checkbox"/> Foot - Boots <input type="checkbox"/> Boots <input type="checkbox"/> Boots <input type="checkbox"/> Half Face <input type="checkbox"/> Cart./Canister <input type="checkbox"/> Full Face <input type="checkbox"/> Cart./Canister <input type="checkbox"/> PAPR <input type="checkbox"/> Cart./Canister <input type="checkbox"/> Type C <input type="checkbox"/> Fall Protection <input type="checkbox"/> Flotation <input type="checkbox"/> Other	Task(s): <input type="checkbox"/> Head <input type="checkbox"/> Eye and Face <input type="checkbox"/> Hearing <input type="checkbox"/> Arms and Legs Only <input type="checkbox"/> Whole Body <input type="checkbox"/> Apron <input type="checkbox"/> Hand - Gloves <input type="checkbox"/> Gloves <input type="checkbox"/> Gloves <input type="checkbox"/> Foot - Boots <input type="checkbox"/> Boots <input type="checkbox"/> Boots <input type="checkbox"/> SAR - Airline <input type="checkbox"/> SCBA <input type="checkbox"/> Comb. Airline/SCBA <input type="checkbox"/> Cascade System <input type="checkbox"/> Compressor <input type="checkbox"/> Fall Protection <input type="checkbox"/> Flotation <input type="checkbox"/> Other

SITE OR PROJECT HAZARD MONITORING PROGRAM

Direct Reading Air Monitoring Instruments

Instrument Selection and Initial Check Record

Reporting Format: ☒ Field Notebook ☐ Field Data Sheets ☐ Air Monitoring Log ☐ Trip Report ☐ Other

Instrument	Task No.(s)	Number Required	Number Received	Checked Upon Receipt	Comment	Initial
<input type="checkbox"/> CGI				<input type="checkbox"/>		
<input type="checkbox"/> O ₂				<input type="checkbox"/>		
<input type="checkbox"/> CGI/O ₂				<input type="checkbox"/>		
<input type="checkbox"/> CGI/O ₂ /tox-PPM, H ₂ S, H ₂ S/CO				<input type="checkbox"/>		
<input type="checkbox"/> RAD-GM				<input type="checkbox"/>		
<input type="checkbox"/> NaI				<input type="checkbox"/>		
<input type="checkbox"/> ZnS				<input type="checkbox"/>		
<input type="checkbox"/> Other _____				<input type="checkbox"/>		
<input type="checkbox"/> PID				<input type="checkbox"/>		
<input type="checkbox"/> HNU 10.2				<input type="checkbox"/>		
<input type="checkbox"/> HNU 11.7				<input type="checkbox"/>		
<input type="checkbox"/> Photovac, TMA				<input type="checkbox"/>		
<input type="checkbox"/> OVM				<input type="checkbox"/>		
<input type="checkbox"/> Other _____	ALL			<input type="checkbox"/>		
<input checked="" type="checkbox"/> FID				<input type="checkbox"/>		
<input checked="" type="checkbox"/> FOX 128	ALL			<input type="checkbox"/>		
<input type="checkbox"/> Heath, AID, Other _____				<input type="checkbox"/>		
<input checked="" type="checkbox"/> RAM, Mini-RAM, Other _____	ALL			<input type="checkbox"/>		
<input type="checkbox"/> Monotox				<input type="checkbox"/>		
<input type="checkbox"/> H ₂ S				<input type="checkbox"/>		
<input type="checkbox"/> COCL				<input type="checkbox"/>		
<input type="checkbox"/> SO ₂				<input type="checkbox"/>		
<input type="checkbox"/> HCN				<input type="checkbox"/>		
<input type="checkbox"/> Other _____				<input type="checkbox"/>		
<input type="checkbox"/> Bio-Aerosol Monitor				<input type="checkbox"/>		
<input type="checkbox"/> Detector Tubes				<input type="checkbox"/>		
<input type="checkbox"/> Pump - MSA, Draeger, Sensidyne				<input type="checkbox"/>		
<input type="checkbox"/> Tubes/type: _____				<input type="checkbox"/>		
<input type="checkbox"/> Tubes/type: _____				<input type="checkbox"/>		
<input type="checkbox"/> Other _____				<input type="checkbox"/>		

SITE OR PROJECT HAZARD MONITORING PROGRAM

Direct Reading Air Monitoring Instruments Calibration Record

[illegible]

SITE AIR MONITORING PROGRAM

Direct Reading Air Monitoring Instruments

Air Monitoring Instrument: *DVA*

Air Monitoring Frequency:

- ☐ Periodically:
☐ Periodically:
☒ Continuously:
☐ Other:

Monitoring Locations

- ☒ Upwind/downwind of site activities
☐ Near residents, etc.
☒ Key site activity locations:
☐ Decon area
☒ Staging area
☒ Excavation area
☐ Field lab area
☐ Storage tanks
☒ Lagoons
☒ Drums
☐ Fixed stations
☒ Other: *Breathing zone*

Air Monitoring Instrument: *mini-RAM*

Air Monitoring Frequency:

- ☐ Periodically:
☐ Periodically:
☒ Continuously:
☐ Other:

Monitoring Locations

- ☒ Upwind/downwind of site activities
☐ Near residents, etc.
☒ Key site activity locations:
☐ Decon area
☒ Staging area
☒ Excavation area
☐ Field lab area
☐ Storage tanks
☒ Lagoons
☒ Drums
☐ Fixed stations
☒ Other: *Breathing zone*

SITE AIR MONITORING PROGRAM				
Action Levels				
These Action Levels, if not defined by regulation, are some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.				
	Tasks	Action Level		Action
<input type="checkbox"/> Explosive atmosphere		Ambient Air Concentration	Confined Space Concentration	
		< 10% LEL	0 to 1% LEL	Work may continue. Consider toxicity potential.
		10 to 25% LEL	1 to 10% LEL	Work may continue. Increase monitoring frequency.
		> 25% LEL	> 10% LEL	Work must stop. Ventilate area before returning.
<input type="checkbox"/> Oxygen		Ambient Air Concentration	Confined Space Concentration	
		< 19.5% O ₂	< 19.5% O ₂	Leave Area. Re-enter only with self-contained breathing apparatus.
		19.5% to 25% O ₂	19.5% to 23.5% O ₂	Work may continue. Investigate changes from 21%.
		> 25% O ₂	> 23.5% O ₂	Work must stop. Ventilate area before returning.
<input type="checkbox"/> Radiation		< 3 times background 3 Times Background to < 1 mR/hour > 1 mrem/hour		Continue Work Radiation above background levels (normally 0.01-0.02 mR/hr) signifies possible source(s) radiation present. Continue investigation with caution. Perform thorough monitoring. Consult with a Health Physicist. Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of Health Physicist.
<input checked="" type="checkbox"/> Organic gases and vapors	All	OVA > 55 units		stop work if sustained
<input checked="" type="checkbox"/> Inorganic gases, vapors and particulates	All	0.25 mg/m ³		stop work if sustained

SITE AIR MONITORING PROGRAM

Ambient Air Sampling

Check situations which will require or action levels which will apply to deciding to institute or increase scope of planned air sampling.

- ☒ No air sampling is required on this site.
☐ An air sampling plan is incorporated in this HASP.

Meteorological Conditions

- ☐ Dry weather for ____ days
☐ Ambient temperature above ____ °F
☐ Wind increasing potential of more contaminant dispersion in or migration out of controlled area.

Activities which will require instituting or increasing scope of air sampling:

- ☐ Major spills
☐ New site activity resulting in potential presence of new chemical hazards.
☐ Site activity increases airborne contaminants possibilities.
☐ Air sampling documentation required for:
☐ Downgrading from stipulated level of protection
☐ Documenting no migration of contaminants offsite through air

Applicable Action Levels for instituting Air Sampling:

- ☐ Visible vapor/gas clouds or vapor levels, or
☐ Visible dust or particulate levels measured with Direct Reading Instrument, two-three times background or above action level sustained over 10-15 minute period.

The following requirements apply to air sampling:

Sampling Matrix/Air Interface - Monitor matrix/air interface and breathing zone periodically with DRI. If vapor levels > 2-3 times background, monitor continuously. Follow No. 4.

Container Opening - Monitor opening and breathing zone periodically with DRI. If vapor levels > 2-3 times background, monitor opening and breathing zone continuously. Follow No. 4.

Excavation/Drilling/Intrusive Work - Monitor at ground level and breathing zone periodically with DRI. If vapor levels > 2-3 times background, monitor opening and breathing zone continuously. Follow No. 4.

Breathing Zone - Ensure level of protection specified in HASP is being used. Consult HASP or Corporate Health and Safety relative to instituting personnel, area, or perimeter sampling.

- ☐ Other

SITE AIR MONITORING PROGRAM

APB

Sample Location		
	Locations	Substances Sampled For
<input type="checkbox"/>	Ambient background	
<input type="checkbox"/>	Personal samples, onsite	
<input type="checkbox"/>	Personal samples, offsite	
<input type="checkbox"/>	Fixed, onsite samples	
<input type="checkbox"/>	Fixed, offsite samples	
<input type="checkbox"/>	Mobile offsite samples	
<input type="checkbox"/>	Mobile onsite samples	
<input type="checkbox"/>	Background sample stations	

SITE AIR MONITORING PROGRAM

Air Sampling *NA*

Personal Sampling Pumps - Gillian, SKC, MSA

No.

Sampling Media - Sorbent Tubes

Task(s)	Location	Duration	Frequency	Type	Analysis Method

Sampling Media - Filter

Sampling Media - Impinger

Sampling Media - Air Bag

SITE AIR MONITORING PROGRAM

Air Sampling *NA*

Hi-Volume Pumps - Gilian, SKC, MSA

Sampling Media - Filter

Task(s)	Location	Duration	Frequency	Type	Analysis Method

Portable Gas Chromatograph

Task(s):

Type:

Portable GC Analytical Plan:

Passive Dosimeters

	Task(s)	Type	Location	Frequency	Duration
<input type="checkbox"/> Organic Vapor					
<input type="checkbox"/> Mercury Vapor					
<input type="checkbox"/> Paper Color Change					
<input type="checkbox"/> TLD					
<input type="checkbox"/> Film Badge					
<input type="checkbox"/> Liquid Media					

Wipe Sampling

Wipe Sampling Plan:

SITE AIR MONITORING PROGRAM <i>NA</i>				
Physical Hazard and Miscellaneous Monitors and Detectors				
	Task(s)	Calibration Required?/Method	Location	Frequency
<input type="checkbox"/> Sound Level Meter		<input type="checkbox"/>		
<input type="checkbox"/> Noise Dosimeter(s)		<input type="checkbox"/>		
<input type="checkbox"/> Octave Band Analyzer		<input type="checkbox"/>		
<input type="checkbox"/> Electric Circ. Detector		<input type="checkbox"/>		
<input type="checkbox"/> Thermometer		<input type="checkbox"/>		
<input type="checkbox"/> Wind Speed Indicator		<input type="checkbox"/>		
<input type="checkbox"/> Barometer		<input type="checkbox"/>		
<input type="checkbox"/> Psychrometer		<input type="checkbox"/>		
<input type="checkbox"/> Infrared Thermometer		<input type="checkbox"/>		
<input type="checkbox"/> Microwave Detector		<input type="checkbox"/>		
<input type="checkbox"/> pH Meter		<input type="checkbox"/>		
Indicator Kits				
	Task(s)		Location	Frequency
<input type="checkbox"/> pH Paper				
<input type="checkbox"/> Peroxide Paper				
<input type="checkbox"/> Chlor-N-Oil Kit				
<input type="checkbox"/> Hazard Categorizing Kit				
<input type="checkbox"/> Asbestos Test Kit				

SITE AIR MONITORING PROGRAM								
Work Location Instrument Readings								
Location:								
% LEL	% O ₂	PID (units)	FID (units)	Aerosol Monitor (mg/m ³)	GM: Shield Probe/Thin Window		NaI (uR/hr)	ZnS (cpm)
					mR/hr	cpm		
Monitox (ppm)				Detector Tube(s)				
Sound Levels (dBA)		Illumination	pH	Other	Other	Other	Other	Other
Location:								
% LEL	% O ₂	PID (units)	FID (units)	Aerosol Monitor (mg/m ³)	GM: Shield Probe/Thin Window		NaI (uR/hr)	ZnS (cpm)
					mR/hr	cpm		
Monitox (ppm)				Detector Tube(s)				
Sound Levels (dBA)		Illumination	pH	Other	Other	Other	Other	Other

CONTINGENCIES

Emergency Contacts and Phone Numbers

Agency	Contact	Phone Number
Local Medical Emergency Facility (LMF)		
WESTON Medical Emergency Contact	EMR - Dr. Elaine Theriault	1-800-229-3674
WESTON Health and Safety	Corporate Health and Safety	(505)884-5050
WESTON Health and Safety	SCR Health and Safety - Darryl Drenon	Pager: (800)507-1892 or (713)621-182
Fire Department		911 (610)-701-7406 - 3000
Police Department		911
Onsite Coordinator	Debbie Raca	(281) 343-2313
Site Telephone	Debbie Raca	(281) 343-2313
Nearest Telephone		

Local Medical Emergency Facility(s)

Name of Hospital: <u>Polly-Ryan Memorial Hospital</u>		
Address: <u>1705 Jackson St. Richmond, TX 77469</u>		Phone No.: <u>(281) 342-2811</u>
Name of Contact: <u>Yolanda Mendoza</u>		Phone No.:
Type of Service:	Route to Hospital (written detail):	Travel time from site:
<input type="checkbox"/> Physical trauma only <input type="checkbox"/> Chemical exposure only <input checked="" type="checkbox"/> Physical trauma and chemical exposure <input checked="" type="checkbox"/> Available 24 hours	<u>Go west on Jones Rd to FM 762. Go north on FM 762, past FM 2759 to Richmond, TX. At Main St, turn left. Turn left @ next block = Jackson St. & the hospital is on the corner</u>	<u>15 minutes</u> Distance to hospital: <u>≈ 10 miles</u> Name/No. of 24-hr Ambulance Service: <u>911</u>

Secondary or Specialty Service Provider

Name of Hospital:		
Address:		Phone No.:
Name of Contact:		Phone No.:
Type of Service:	Route to Hospital (written detail):	Travel time from site:
<input type="checkbox"/> Physical trauma only <input type="checkbox"/> Chemical exposure only <input type="checkbox"/> Physical trauma and chemical exposure <input type="checkbox"/> Available 24 hours		Distance to hospital: Name/No. of 24-hr Ambulance Service:

Figure 1. Route to Hospital

(Draw map to hospital here if space permits or attach on separate sheet.)

See next page

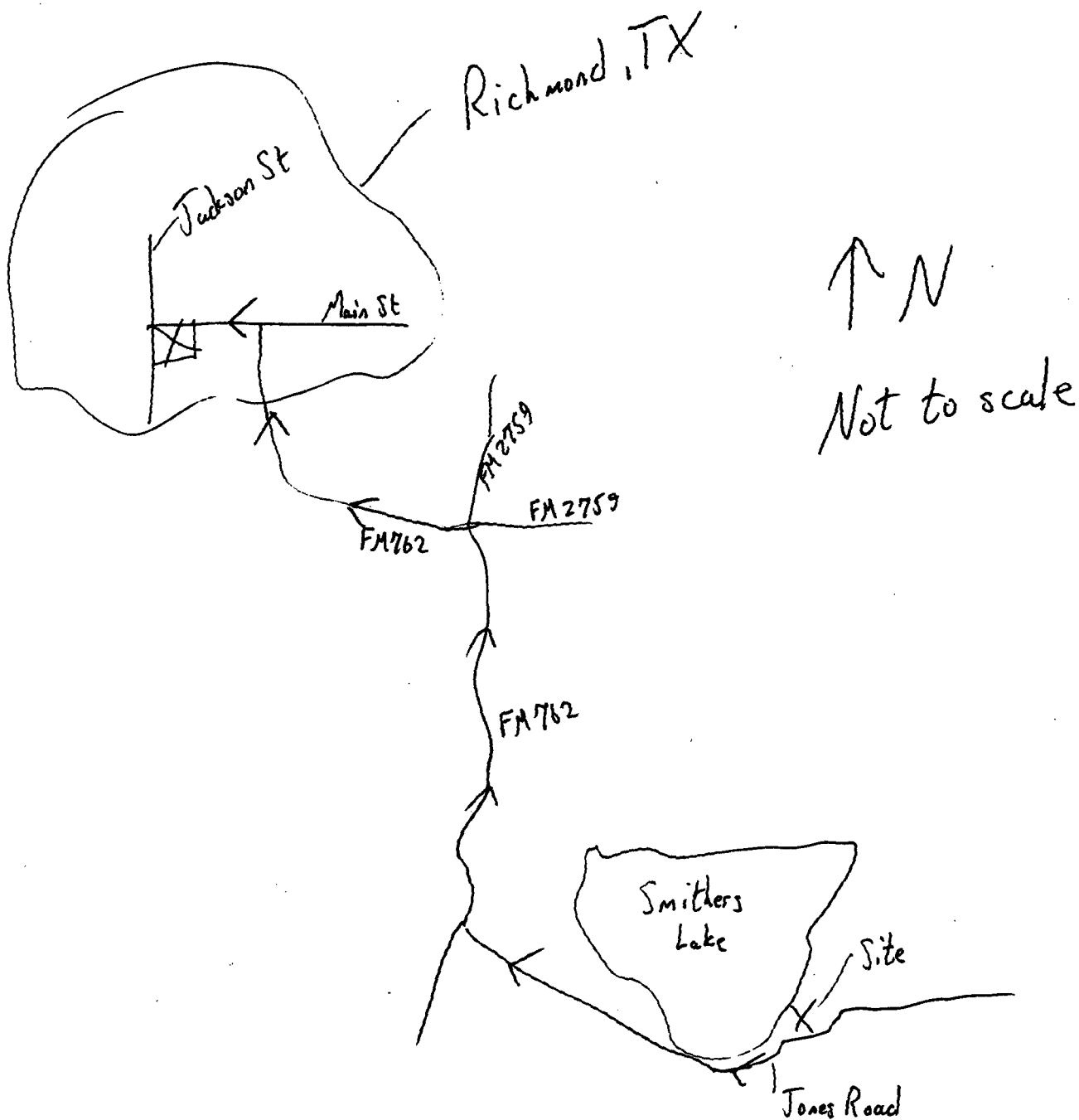


Figure 1 - Route to Hospital (Map)

CONTINGENCIES				
Response Plans				
Medical - General Provide First Aid as trained, assess and determine need for further medical assistance, Transport or arrange for transport after appropriate decontamination	First Aid Kit:	Type 20 man BBP	Location Weston vehicle	Special First Aid Procedures: Cyanides on site <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No. If yes, contact LMF. Do they have antidote kit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Eyewash required <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Type Eye Store	Location West	ME on site <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No. If yes, need neutralizing ointment for First Aid kit. Contact LMF.
	Shower required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Type	Location	
Plan for Response to Spill/Release		Plan for Response to Fire/Explosion		Fire Extinguishers
In the event of a spill or release, ensure safety, assess situation and perform containment and control measures as appropriate:	a. Clean up per MSDS if small or; Sound Alarm, call for assistance, Notify Emergency Coordinator b. Evacuate to pre-determined safe place c. Account for personnel d. Determine if Team can respond safely e. Mobilize per Site Spill Response Plan	In the event of a fire or explosion, ensure personal safety, assess situation and perform containment and control measures as appropriate:	a. Sound Alarm and call assistance, Notify Emergency Coordinator b. Evacuate to pre-determined safe place c. Account for personnel d. Use fire extinguisher, <u>only if safe and trained</u> e. Standby to inform Emergency responders of materials and conditions	Type/Location ABC/Weston vehicle
Description of Spill Response Gear	Location	Description (Other Fire Response Equipment)		Location
none				
Plan to Response to Security Problems call HLP security and/or 911				

DECONTAMINATION PLAN

Personnel Decontamination

Consistent with the levels of protection required, step-by-step procedures for personnel decontamination for each Level of Protection are attached.

Levels of Protection Required for Decontamination Personnel

The levels of protection required for personnel assisting with decontamination will be:

☐ Level B

☐ Level C

☒ Level D

Modifications include:

Disposition of Decontamination Wastes

Provide a description of waste disposition including identification of storage area, hauler, and final disposal site, if applicable:

NA

Equipment Decontamination

A procedure for decontamination steps required for non-sampling equipment and heavy machinery follows:

Non-sampling equipment, such as monitoring equipment, will not be exposed to sources of contamination. They will be cleaned with a damp towel if necessary. There will be no heavy machinery associated with the project other than a van and a car. Vehicles will not be driven into areas of known or suspected contamination.

Sampling Equipment Decontamination

Sampling equipment will be decontaminated in accordance with the following procedure:

Only dedicated sampling equipment will be used and will be disposed of in a trash bag. (No sampling during Task 1 activities)

LEVEL D/MODIFIED LEVEL D DECONTAMINATION PLAN

Check indicated functions or add steps as necessary:

Function	Description of Process, Solution, and Container
<input checked="" type="checkbox"/> Segregated equipment drop	Put equipment in bag
<input type="checkbox"/> Boot cover and glove wash	
<input type="checkbox"/> Boot cover and glove rinse	
<input type="checkbox"/> Tape removal - outer glove and boot	
<input checked="" type="checkbox"/> Boot cover removal	Double bag for disposal
<input type="checkbox"/> Outer glove removal	

HOTLINE

<input type="checkbox"/> Suit/safety boot wash	
<input type="checkbox"/> Suit/boot/glove rinse	
<input type="checkbox"/> Safety boot removal	
<input checked="" type="checkbox"/> Suit removal	Bag coveralls for laundry
<input type="checkbox"/> Inner glove wash	
<input type="checkbox"/> Inner glove rinse	
<input checked="" type="checkbox"/> Inner glove removal	Double bag for disposal
<input type="checkbox"/> Inner clothing removal	

CRC/SAFE ZONE BOUNDARY

<input checked="" type="checkbox"/> Field wash	Wash hands before leaving site
<input type="checkbox"/> Redress	

Disposal Plan, End of Day:

All PPE will be sealed in bags & disposed in an on-site dumpster

Disposal Plan, End of Week:

Same as daily plan.

Disposal Plan, End of Project:

LEVEL C DECONTAMINATION PLAN

Check indicated functions or add steps as necessary: NA

Function	Description of Process, Solution, and Container
<input type="checkbox"/> Segregated equipment drop	
<input type="checkbox"/> Boot cover and glove wash	
<input type="checkbox"/> Boot cover and glove rinse	
<input type="checkbox"/> Tape removal - outer glove and boot	
<input type="checkbox"/> Boot cover removal	
<input type="checkbox"/> Outer glove removal	
HOTLINE	
<input type="checkbox"/> Suit/safety boot wash	
<input type="checkbox"/> Suit/boot/glove rinse	
<input type="checkbox"/> Safety boot removal	
<input type="checkbox"/> Suit removal	
<input type="checkbox"/> Inner glove wash	
<input type="checkbox"/> Inner glove rinse	
<input type="checkbox"/> Face piece removal	
<input type="checkbox"/> Inner glove removal	
<input type="checkbox"/> Inner clothing removal	
CRC/SAFE ZONE BOUNDARY	
<input type="checkbox"/> Field wash	
<input type="checkbox"/> Redress	
Disposal Plan, End of Day:	
Disposal Plan, End of Week:	
Disposal Plan, End of Project:	

LEVEL B DECONTAMINATION PLAN

Check indicated functions or add steps as necessary: *NA*

Function	Description of Process, Solution, and Container
<input type="checkbox"/> Segregated equipment drop	
<input type="checkbox"/> Boot cover and glove wash	
<input type="checkbox"/> Boot cover and glove rinse	
<input type="checkbox"/> Tape removal - outer glove and boot	
<input type="checkbox"/> Boot cover removal	
<input type="checkbox"/> Outer glove removal	

HOTLINE

<input type="checkbox"/> Suit/safety boot wash
<input type="checkbox"/> Suit/SCBA/boot/glove rinse
<input type="checkbox"/> Safety boot removal
<input type="checkbox"/> Remove SCBA backpack w/o disconnecting
<input type="checkbox"/> Splash suit removal
<input type="checkbox"/> Inner glove wash
<input type="checkbox"/> Inner glove rinse
<input type="checkbox"/> SCBA disconnect and face piece removal
<input type="checkbox"/> Inner glove removal
<input type="checkbox"/> Inner clothing removal

CRC/SAFE ZONE BOUNDARY

<input type="checkbox"/> Field wash
<input type="checkbox"/> Redress

Disposal Plan, End of Day:

Disposal Plan, End of Week:

Disposal Plan, End of Project:

SITE PERSONNEL AND CERTIFICATION STATUS

WESTON

Name: Joy Page Title: Engineer Task(s): All Certification Level or Description: O-S/B-T <input checked="" type="checkbox"/> Medical Current <input checked="" type="checkbox"/> Training Current <input checked="" type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Carol La Breche Title: Engineer Task(s): All Certification Level or Description: O-S/B-T <input checked="" type="checkbox"/> Medical Current <input checked="" type="checkbox"/> Training Current <input checked="" type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)
Name: Eric Tate Title: Engineer Task(s): All Certification Level or Description: O-S/B-T <input checked="" type="checkbox"/> Medical Current <input checked="" type="checkbox"/> Training Current <input checked="" type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)

TRAINING CURRENT - Training: All personnel, including visitors, entering the exclusion or contamination reduction zones must have certifications of completion of training in accordance with OSHA 29 CFR 1910, 29 CFR 1926 or 29 CFR 1910.120.

FIT TEST CURRENT - Respirator Fit Testing: All persons, including visitors, entering any area requiring the use or potential use of any negative pressure respirator must have had as a minimum, a qualitative fit test, administered in accordance with OSHA 29 CFR 1910.134 or ANSI within the last 12 months. If site condition require the use of a full face negative pressure, air purifying respirator for protection from Asbestos or Lead, employees must have had a quantitative fit test, administered according to OSHA 29 CFR 1910.1001 or 1025 within the last 6 months.

MEDICAL CURRENT - Medical Monitoring Requirements: All personnel, including visitors, entering the exclusion or contamination reduction zones must be certified as medically fit to work, and to wear a respirator, if appropriate, in accordance with 29 CFR 1910, 29 CFR 1926/1910 or 29 CFR 1910.120.

The Site Health and Safety Coordinator is responsible for verifying all certifications and fit tests.

SITE PERSONNEL AND CERTIFICATION STATUS

Subcontractor's Health and Safety Program Evaluation

Name of Subcontractor:
Address:

Activities to Be Conducted by Subcontractor:

Evaluation Criteria

Medical program meets OSHA/WESTON criteria <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	Personal protective equipment available <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	Onsite monitoring equipment available calibrated and operated properly <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:
Safe working procedures clearly specified <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	Training meets OSHA/WESTON criteria <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	Emergency procedures <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:
Decontamination procedures <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	General health and safety program evaluation <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable Comments:	Additional comments: <input type="checkbox"/> Subcontractor has agreed to and will conform with the WESTON HASP for this Project. <input type="checkbox"/> Subcontractor will work under his own HASP which has been accepted by Corporate Health and Safety.
Evaluation Conducted by: _____ Date: _____		
Subcontractor		
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	
Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	Name: Title: Task(s): Certification Level or Description: <input type="checkbox"/> Medical Current <input type="checkbox"/> Training Current <input type="checkbox"/> Fit Test Current (Qual.) <input type="checkbox"/> Fit Test Current (Quant.)	

HEALTH AND SAFETY PLAN APPROVAL/SIGNOFF FORM

Site Name: HL + P Parish Station

WO# 110998-112-027-0001-03

Address: 2759 Jones Road Thompsons, TX

I understand, agree to and will conform with the information set forth in this Health and Safety Plan (and attachments) as discussed in the Personnel Health and Safety briefing(s).

Name

Signature

Date

Eric Tate

Eric Tate

5/22/97

Carol La Breche

Carol La Breche

5/22/97

Jay L. Page

J L Page

5/22/97

TRAINING AND BRIEFING TOPICS

The following items will be covered at the site specific training meeting, daily or periodically.

<input type="checkbox"/> Site characterization and analysis, Sec. 3.0, 29 CFR 1910.120 i	<input type="checkbox"/> Level A
<input checked="" type="checkbox"/> Physical hazards, Table 3.2	<input type="checkbox"/> Level B
<input checked="" type="checkbox"/> Chemical hazards, Table 3.1	<input type="checkbox"/> Level C
<input checked="" type="checkbox"/> Animal bites, stings, and poisonous plants	<input checked="" type="checkbox"/> Level D
<input type="checkbox"/> Etiologic (infectious) agents	<input type="checkbox"/> Monitoring, Sec. 7.0; 29 CFR 1910.120 h
<input type="checkbox"/> Site control, Sec. 8.0; 29 CFR 1910.120 d	<input type="checkbox"/> Decontamination, Sec. 9.0; 29 CFR 1910.120 k
<input type="checkbox"/> Engineering controls and work practices, Sec. 8.5; 25 CFR 1910.120 g	<input type="checkbox"/> Emergency response, Sec. 10.0; 29 CFR 1910.120 l
<input type="checkbox"/> Heavy machinery	<input type="checkbox"/> Elements of an emergency response, Sec. 100; 29 CFR 1910.120 l
<input type="checkbox"/> Forklift	<input type="checkbox"/> Procedures for handling site emergency incidents, Sec. 10.0; 29 CFR 1910.120 l
<input type="checkbox"/> Backhoe	<input type="checkbox"/> Offsite emergency response, 29 CFR 1910.120 l
<input type="checkbox"/> Equipment	<input type="checkbox"/> Handling drums and containers, 29 CFR 1910.120 j
<input type="checkbox"/> Tools	<input type="checkbox"/> Opening drums and containers
<input type="checkbox"/> Ladder 29 CFR 1910.27 d	<input type="checkbox"/> Electrical material handling equipment
<input type="checkbox"/> Overhead and underground utilities	<input type="checkbox"/> Radioactive waste
<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Shock sensitive waste
<input type="checkbox"/> Structural integrity	<input type="checkbox"/> Laboratory waste packs
<input type="checkbox"/> Unguarded openings - wall, floor, ceilings	<input type="checkbox"/> Sampling drums and containers
<input type="checkbox"/> Pressurized air cylinders	<input type="checkbox"/> Shipping and transport, 49 CFR 172.101
<input checked="" type="checkbox"/> Personnel protective equipment, Sec. 5.0; 25 CFR 1910.120 g; 29 CFR 1910.134	<input type="checkbox"/> Tank and vault procedures
<input type="checkbox"/> Respiratory protection, Sec. 5.8; 29 CFR 1910.120 g; 288.2-1980	<input type="checkbox"/> Illumination, 29 CFR 1910.120 m
	<input type="checkbox"/> Sanitation, 29 CFR 1910.120 n

ATTACHMENT "A"
CHEMICAL CONTAMINANTS
DATA SHEETS

*(Use HASP Form 33HASP.894
or attach appropriate data sheets.)*

HEALTH AND SAFETY EVALUATION – ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/ Symptoms	Monitoring Instruments/ Ionization Potential + % Response
TOLUENE	<input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: FP: LEL: 1.1% UEL: 7.1% Auto. Ig.: BP: 232°F	<input type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 200ppm <input checked="" type="checkbox"/> TLV 100ppm <input checked="" type="checkbox"/> IDLH 500ppm <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input checked="" type="checkbox"/> OVA <input type="checkbox"/> _____
CAS No: 108-88-3		Incompatible With:		MP:		Symptoms:	IP:
Synonyms:		strong oxidizers		Sp. Gr.: 0.87			% Response:
Methyl benzen				Vap. D.:			
Toluol				Vap. P.: 21mm			
				H ₂ O Sol.:			
				Other:			

HEALTH AND SAFETY EVALUATION – ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/Symptoms	Monitoring Instruments/Ionization Potential + % Response
XYLENES	<input type="checkbox"/> Explosive <input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas	<input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: FP: LEL: 1.1% UEL: 7.0% Auto. Ig.: BP: 281°F	<input type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 100ppm. <input checked="" type="checkbox"/> TLV 100ppm <input checked="" type="checkbox"/> IDLH 900ppm. <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input checked="" type="checkbox"/> OVA <input type="checkbox"/> _____
CAS No:		Incompatible With:		MP:		Symptoms:	IP:
Synonyms:		Strong oxidizers acids		Sp. Gr.:			% Response:
				Vap. D.:			
				Vap. P.: 9mm H ₂ O Sol.: 0.02% Other:			

HEALTH AND SAFETY EVALUATION - ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/Symptoms	Monitoring Instruments/Ionization Potential + % Response
NICKEL	<input type="checkbox"/> Explosive <input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: FP: LEL: UEL: Auto. Ig.: BP: 5139°F MP: 2831°F Sp. Gr.: 8.90 Vap. D.: Vap. P.: 0mm H ₂ O Sol.: 0 Other:	<input checked="" type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 1 mg/m ³ <input checked="" type="checkbox"/> TLV 0.015 mg/m ³ <input checked="" type="checkbox"/> IDLH 10 mg/m ³ <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input type="checkbox"/> OVA <input checked="" type="checkbox"/> mini-RAM
CAS No: 7440-02-0		Incompatible With: strong acids, sulfur, combustibles				Symptoms:	IP:
Synonyms:							% Response:

HEALTH AND SAFETY EVALUATION -- ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/Symptoms	Monitoring Instruments/Ionization Potential + % Response
CHROMIUM	<input type="checkbox"/> Explosive <input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: FP: LEL: UEL: Auto. Ig.: BP: 4788°F MP: 3452°F Sp. Gr.: 7.14 Vap. D.: Vap. P.: 0mm H ₂ O Sol.: 0 Other:	<input type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 1 mg/m ³ <input checked="" type="checkbox"/> TLV 0.5 mg/m ³ <input checked="" type="checkbox"/> IDLH 250 mg/m ³ <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input type="checkbox"/> OVA <input checked="" type="checkbox"/> mini-RAM
CAS No: 7440-47-3		Incompatible With: strong oxidizers alkalis				Symptoms:	IP:
Synonyms: Chrome							% Response:

HEALTH AND SAFETY EVALUATION — ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/ Symptoms	Monitoring Instruments/ Ionization Potential + % Response
ANTIMONY	<input type="checkbox"/> Explosive <input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: FP: LEL: UEL: Auto. Ig.: BP: 2975°F MP: 1166°F Sp. Gr.: 6.69 Vap. D.: Vap. P.: 0 mm H ₂ O Sol.: 0 Other:	<input type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 0.5 mg/m ³ <input checked="" type="checkbox"/> TLV 0.5 mg/m ³ <input checked="" type="checkbox"/> IDLH 50 mg/m ³ <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input type="checkbox"/> OVA <input checked="" type="checkbox"/> mini-RAM
CAS No: 7440-38-0		Incompatible With: Strong oxidizers, acids				Symptoms:	IP:
Synonyms:							% Response:

HEALTH AND SAFETY EVALUATION - ☒ CHEMICAL HAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/Symptoms	Monitoring Instruments/Ionization Potential + % Response
BARIUM	<input type="checkbox"/> Explosive <input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Radioactive <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas	pH: _____ FP: _____ LEL: _____ UEL: _____ Auto. Ig.: _____ BP: -	<input type="checkbox"/> CA <input checked="" type="checkbox"/> PEL 0.5 mg/m^3 <input checked="" type="checkbox"/> TLV 0.5 mg/m^3 <input checked="" type="checkbox"/> IDLH 50 mg/m^3 <input type="checkbox"/> Only toxicological data available <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Contact <input type="checkbox"/> Direct Penetration <input type="checkbox"/> Other:	<input type="checkbox"/> PID <input type="checkbox"/> 11.7 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> OVM <input type="checkbox"/> CGI <input type="checkbox"/> OVA <input checked="" type="checkbox"/> Mini-RAM
CAS No: 10022-31-8		Incompatible With: Acids + oxidizers		MP: 1094°C		Symptoms:	IP:
Synonyms: Barium nitrate	Sp. Gr.: 3.24						
	Vap. D.: _____						
	Vap. P.: _____						
				H ₂ O Sol.: _____			
				Other: _____			% Response:

ATTACHMENT "B"
MATERIAL SAFETY DATA SHEETS
(MSDS)

ATTACHMENT "C"
SAFETY PROCEDURES/FIELD OPS
(FLDOP'S)

ATTACHMENT "D"
SITE SPECIFIC HAZARD COMMUNICATION PROGRAM

Location Specific Hazard Communications Program/Checklist

In order to ensure an understanding of and compliance with the Hazard Communication Standard, WESTON will utilize this checklist/document (or similar document) in conjunction with the WESTON Written Hazard Communications Program as a means of meeting site or location specific requirements.

While responsibility for activities within this document reference the WESTON Safety Officer, it is the responsibility of all personnel to effect compliance. Responsibilities under various conditions can be found within the WESTON Written Hazard Communication Program.

To ensure that information about the dangers of all hazardous chemicals used by WESTON are known by all affected employees, the following hazardous information program has been established. All affected personnel will participate in the hazard communication program. This written program as well as WESTON's Corporate Hazard Communication Program will be available for review by any employee, employee representative, representative of OSHA, NIOSH or any affected employer/employee on a multi-employer site.

___ Site or other location name/address:

___ Site/Project/Location Manager: _____

___ Site/Location Safety Officer: _____

___ List of chemicals complied, format: HASP: _____ Other: _____

___ Location of MSDS Files: _____

___ Training Conducted by (name and date): _____

___ Indicate format of training documentation: Field Log: _____ Other: _____

___ Client briefing conducted regarding hazard communication:

___ If multi-employer site, indicate name of affected companies:

___ Other employer(s) notified of chemicals, labelling and MSDS information:

___ WESTON notified of other employer's or clients hazard communication program as necessary.

List of Hazardous Chemicals

A list of known hazardous chemicals used by WESTON personnel must be prepared and attached to this document or in a centrally identified location with the MSDS's. Further information on each chemical may be obtained by reviewing the appropriate MSDS's. The list will be arranged to enable cross reference with the MSDS file and the label on the container. The SO or location manager is responsible for ensuring the chemical listing remains up-to-date.

Container Labeling

The WESTON Safety Officer (SO) will verify that all containers received from the chemical manufacturer, importer or distributor for use on site will be clearly labeled.

The SO is responsible for assuring labels are placed where required and for comparing MSDS's and other information with label information to ensure correctness.

Material Safety Data Sheets (MSDS)

The SO is responsible for establishing and monitoring WESTON's MSDS program for the location. The SO will make sure procedures are developed to obtain the necessary MSDS's and will review incoming MSDS's for new or significant health and safety information. He/she will see that any new information is passed on to the affected employees. If an MSDS is not received at the time of initial shipment, the SO will call the manufacturer and have a MSDS delivered for that product in accordance with the requirements of WESTON's Written Hazard Communication Program.

A log for, and copies of, MSDS's for all hazardous chemicals in use will be kept in the MSDS folder at a location known to all site workers. MSDS's will be readily available to all employees during each work shift. If an MSDS is not available, immediately contact the WESTON SO or designated alternate. When revised MSDS's are received the SO will immediately replace the old MSDS's.

Employee Training and Information

The SO is responsible for the WESTON site-specific personnel training program. The SO will ensure that all program elements specified below are supplied to all affected employees.

At the time of initial assignment for employees to the work site or whenever a new hazard is introduced into the work area employees will attend

a health and safety meeting or briefing, includes the information indicated below.

- Hazardous chemicals present at the worksite
- Physical and health risks of the hazardous chemicals
- The signs and symptoms of overexposure
- Procedures to follow if employees are overexposed to hazardous chemicals
- Location of the MSDS file and written hazard communication program
- How to determine the presence or release of hazardous chemicals in the employees work area
- How to read labels and review MSDS's to obtain hazard information
- Steps WESTON has taken to reduce or prevent exposure to hazardous chemicals
- How to reduce or prevent exposure to hazardous chemicals through use of controls procedures, work practices and personal protective equipment
- Hazardous, non-routine tasks to be performed (if any)
- Chemicals within unlabeled piping (if any)

Hazardous Non-Routine Tasks

When employees are required to perform hazardous non-routine tasks the affected employee(s) will be given information by the SO about the hazardous chemicals he or she may utilize during such activity. This information will include specific chemical hazards, protective and safety measures the employee can use and steps WESTON is using to reduce the hazards. These steps include, but are not limited to, ventilation, respirators, presence of another employee and emergency procedures.

Chemicals in Unlabeled Pipes

Work activities may be performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee shall contact the SO at which time information as to: the chemical(s) in the pipes, potential hazards of the chemicals or the process involved, and safety precautions which should be taken will be determined and presented.

Multi-Employer Worksites

It is the responsibility of the SO to provide other employers with information about hazardous chemicals imported by WESTON to which their employees may be exposed, along with suggested safety precautions. It is also the responsibility of SO and the site manager to obtain information about hazardous chemicals used by other employers to which WESTON employees may be exposed. WESTON's chemical listing will be made available to other employers as requested. MSDS's will be available for viewing as necessary.

The location, format and/or procedures for accessing MSDS information must be relayed to affected employees.